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TOWARD AN UNDERSTANDING

OF GOAL COMMITMENT:

A PROPOSED MODEL

THESIS

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AFIT/GSM/LSR/89S-11

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TOWARD AN UNDERSTANDING OF GOAL COMMITMENT:

A PROPOSED MODEL

THESIS

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

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Captain, USAF

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Abstract

The purpose of this study was to determine the factors influencing goal commitment by reviewing the literature on goal setting. The study had four basic objectives:

(1) Determine the factor influencing goal commitment. (2) Construct a goal commitment model based on previous research. (3) Measure the determinants via a survey instrument. (4) Based on the results of the data analysis, propose practical applications for commanders, managers and supervisors to obtain goal commitment.

The study found that five determinants significantly determine goal commitment. They are: external rewards, self efficacy, trust, expectancy and competition. Competition was a unique determinants in that it had a negative impact on goal commitment.

Analysis of an attitudinal survey and the literature found that specific programs can affect organizational goal commitment. Many of the programs involve direct management or commander support. For example, reward programs can be structured so that goal commitment can be attained. Other programs are designed to help the worker "see" their worth. Examples include programs designed to facilitate a person's self efficacy, and improve the trust between the work and management.

TOWARD AN UNDERSTANDING OF GOAL COMMITMENT:

A PROPOSED MODEL

I. Introduction

Goal setting is a common occurrence in many Department of Defense
(DOD) organizations. Year after year, commanders at all levels issue
their organizational goals using inputs from their subordinates.
Perhaps, some use their established goals as a check point to evaluate
their performance at the end of the period, usually annually in DOD
organizations. Others may simply discard them; after all, no one really
uses goal setting to improve performance. Some experts would argue,
however, that goal setting is an integral part of motivation (17) and
innovation which leads to improved performance.

Consider for a moment that goal setting makes a significant
difference to the organizational well being. Also, consider that goal
setting is no respecter of organization type (private versus public).
The organization that chooses to set goals as a means of achieving an
end must also consider how to obtain a high level of commitment to those
goals. Some may have thought that goal commitment "just happened" with
the act of setting goals, but the research that follows should prove
otherwise. It is of little value, however, to have a set of goals and
then not be committed to obtaining or attaining them.

Once the need in having a commitment to the goals, the next step is
implementing changes that will cause or encourage a commitment to the

goals. Unfortunately, this step is generally not available to commanders. And, now, with quality, efficiency, economic uncertainty, hostile takeovers, etc. becoming apart of business conversations, this step becomes more important to the organization that is to succeed. Therefore, this research focuses on providing answers so that this critical step can be implemented. By researching goal commitment, more specifically, the determinants of goal commitment, those concepts that cause a subordinate to be committed to the organizational goals will emerge.

As apart of the research, it is important to identify the scope of effort. The next section will accomplish that. The remainder of the chapter includes sections which provide a definition of goal commitment, a statement of the problem, and asks an investigative question and lists the hypotheses to answer the question. Finally, the chapter concludes with a preview of the remaining chapters.

Research Issue

Recently, many organizations in government and industry took a serious look at their productivity levels as well as their ratings in quality, efficiency, retention, etc. In their evaluation many questions were raised, specifically, pertaining to how production or services could be improved. Senior leadership noted that in order to institutionalize these improvements major changes were required, impacting virtually every functional area within the organization.

United States Air Force organizations were included in this perceived need to improve service or production. Consequently, institutionalizing this change became the focus of a major research effort

of many Air Force organizations in concert with the Air Force Institute of Technology.

Scope of the Research

While goal setting seems to be an accepted norm in industry and government, factors that determine whether a person is committed to the organizational goals have yet to be tested. Thus, this research effort focuses on the determinants of goal commitment. This is not to say that models have not been hypothesized -- they have -- but little research has investigated their validity and accuracy.

This effort begins with a review of the literature which suggests several determinants for inclusion in a formal goal commitment model. The literature search also examines two proposed goal commitment models and discusses the research supporting the models. Because of the limitations of this research and the complexity of the published models, an alternative model is presented. This model integrates many of the same concepts presented in the previous two models, but, in a more simplified, yet comprehensive presentation. This simplified presentation allows the research to consider a comprehensive goal commitment model. However, several assumptions are required and are presented in a later chapter.

The goal commitment determinants identified from the literature review and integrated into the proposed model will be tested through a survey instrument. The survey will be administered to an Air Force organization located in the midwest United States. Analysis should reveal the accuracy and validity of the proposed model as well as the stronger predictors of goal commitment. The model, as tested by the

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survey, must prove to be both accurate and valid in order for the research to continue. Recommendations for future research will be suggested as well.

Definition of Goal Commitment

This section introduces the concept of goal commitment. Obviously, several concepts support goal commitment and these will defined as they are introduced, but, a precursor to understanding the context of this research is a definition of goal commitment.

Researchers have explored many antecedents to goal commitment without formally defining goal commitment (8; 7; 18). Others used goal acceptance and goal commitment interchangeably (3; 4; 6). The lack of a formal definition has led to the use of a more generally accepted, less formal definition. This effort uses the less formal definition and defines goal commitment as the determination of a person or groups of people to achieve a goal or a set of goals. The reader can compare definitions from other researchers such as Locke, et al (17; 20) and Hollenbeck (7).

Problem Statement

Earlier it was mentioned that organizations must, among other things, be innovative to keep pace in today's market. Although solutions are geared towards to private sector, public organizations also have reasons for wanting to institutionalize innovation. For example, the DOD is experiencing what will later become an accepted practice -- having less resources to do the same mission.

Consider, for example, the Air Force Logistics Command (AFLC). A portion of its mission, for instance, is performing major overhauls on existing weapons systems. A weapon system can range from an aircraft such as the F-15 to the avionics on the aircraft to the "black boxes" that collectively form the avionics system. The Logistic Center responsible for maintaining that system may need to improve productivity because of the cuts in the defense budget.

One method to increase productivity, logically, is improving the manner in which the tasks are completed; improving productivity through innovation. Obviously, there are other interactions that must work in harmony: technology usage, task design, etc. But, these are beyond the scope of this research. However, innovation can occur by obtaining a commitment to the organization's goals.

The institutionalization model (Figure 1) presented by Jennings (10) was divided into two areas in order to realize the institutionalization of incremental innovation. One area deals with the "processes" of making innovation successful. Goal setting is a process; obtaining goal commitment ensures that incremental innovation is successful.
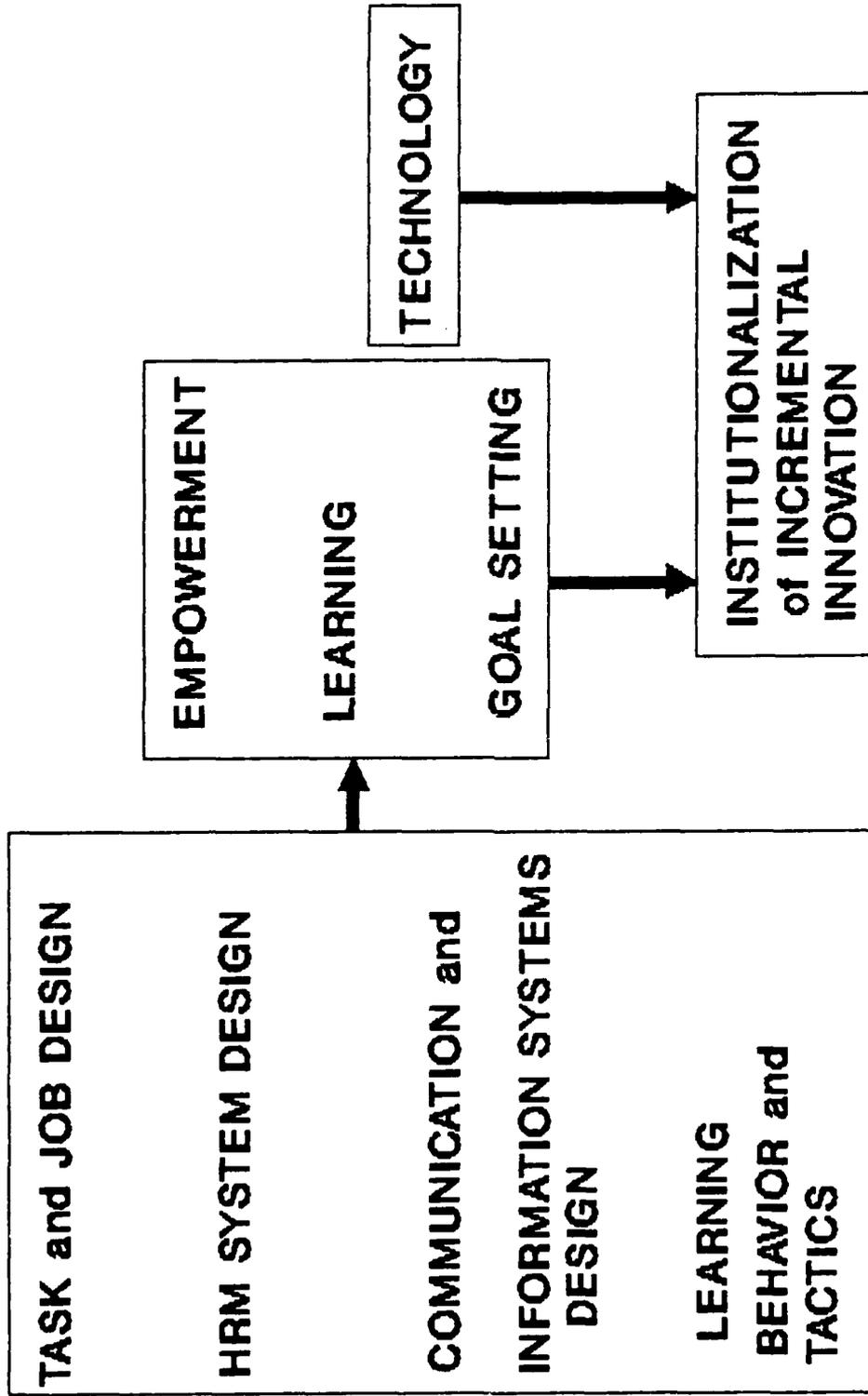
FIGURE 1. Institutionalization of Incremental Innovation

Investigative Questions and Hypotheses

Investigative Question #1. How do each of the antecedents relate to goal commitment?

Hypothesis 1. Participation is highly related to goal commitment. That is, managers, commanders, and others who allow their subordinates to participate, not only in goal setting, but in process decisions, etc will experience a higher level of commitment to the organizational goals.

Hypothesis 2. Authority, in terms of trust, supervisor support, rewards and incentives, and physical presence is highly related to goal commitment.

Hypothesis 3. Peer influence, in terms of peer pressure, peer goals, and peer goal commitment, is highly related to goal commitment.

Hypothesis 4. Competition is highly related to goal commitment.

Hypothesis 5. Expectancy is highly related to goal commitment.

Hypothesis 6. Self efficacy is highly related to goal commitment.

Hypothesis 7. Self administered rewards are highly related to goal commitment.

Summary

A great deal has been written on goal setting and the goal setting process, with little research focusing on what influences people to commit to a set of goals. More and more, however, researchers are no

longer assuming goal commitment is assured when goals are set but are beginning to examine the effect various influences have on goal commitment. The remainder of the research provides further insight into the goal commitment process.

Chapter two explores the literature, analyzes proposed models and forms a potential model which may be used to describe goal commitment for given a set of influences. Chapter three describes the method of approach in determining the antecedents of goal commitment. This will be accomplished via a survey instrument. Chapter four records the analysis as well as the validity, reliability and a multiple regression model. Finally, chapter five draws conclusions and suggests recommendations for further research.

II. Literature Review

Introduction

This chapter provides a review of the literature and discusses goal commitment models posed by Locke, et al (18) and Hollenbeck (7). The review also takes available literature and examines which proposed model determinants warrant further, and, perhaps, more in-depth research.

The literature review begins by explaining the goal commitment model and three familiar goal setting methods. A discussion of how goal commitment can be measured follows, but, in addition to understanding goal commitment measurement, it is important to understand the relationship between goal commitment and performance. Therefore, the interaction between goal commitment and performance is described. Finally, this review attempts to consolidate the research to date on goal commitment and summarize the determinants of goal commitment.

Goal Commitment Models

The Locke model. Locke (18) divides the goal commitment determinants into three categories: external, interactive and internal (Figure 2). The external factors include authority, peer influence, external rewards and incentives. Participation and competition make up the second category -- interactive factors. Finally, the internal factors include expectancy, self-efficacy, and internal rewards.
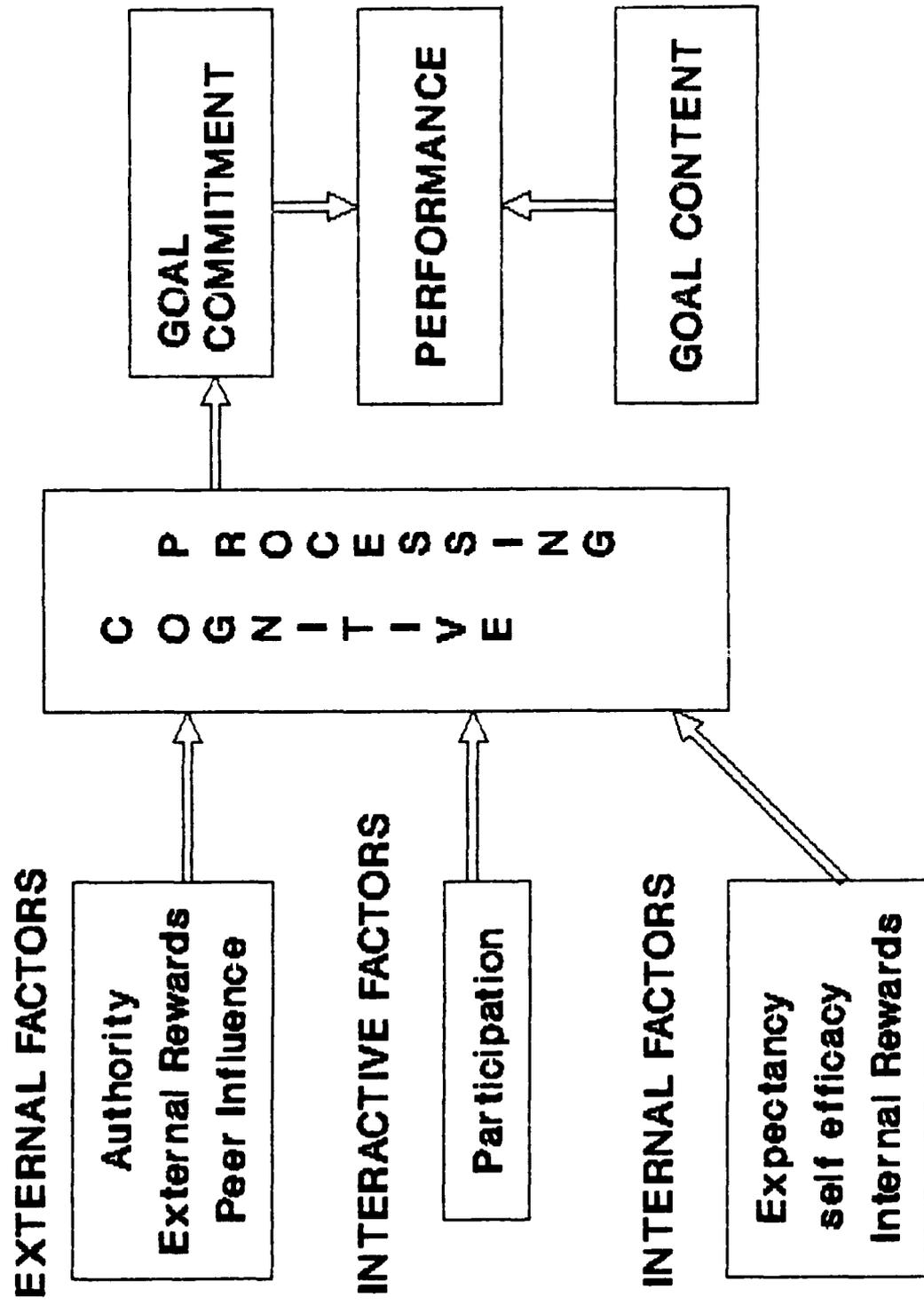
Figure 2. Locke Goal Commitment Model

The model suggests that goal commitment is obtained through a cognitive process. Also, perhaps, Locke argues that these factors are hierarchial, in nature. That is, as a person becomes more cognitively aware, (s)he moves from external factors to interactive to internal factors to influence their commitment to a set of goals. This is not to suggest that a person is influenced by only one factor at a time, but, rather, a person is more influenced by one than the others.

The Hollenbeck model. The model by Hollenbeck and Klein (7) is expectancy based. As shown in Figure 3, the researchers suggest that goal commitment is anchored by both the attractiveness and the expectancy of goal attainment. Within each, two types of influences exists: situational and personal. Because of the limitations of the current effort, and the similarities with the Locke model, only the expectancy of goal attainment is examined. Note: Hollenbeck discusses some of the attractiveness parameters in a previous effort (8).

Hollenbeck and Klein (7) distinguish situational factors from personal factors in that situational factors are influences that present themselves regardless of the person placed in the siltation. For example, people from completely different backgrounds can be faced with similar situations. As a result, each may handle circumstances differently depending on one's environment (situation). Such situational factors include social influences, task complexity, performance constraints, and supervisor support.

On the other hand, people handle circumstances because of their personal factors. These factors represent, in part, the individual. But other personal factors include ability, past success, self esteem and locus of control (7:215).

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Situational factors	Personal factors	Situational factors	Personal factors
Publicness	Need for Acheivement	Social Influence: others' goals, goal commitment, or performance	Ability
Volition	Endurance	Task complexity	Past success
Explicitness	Type A Personality	Performance	Self-esteem
Reward structure	Organizational commitment	Supervisor supportiveness	Locus of control
Competition	Job involvement		

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       Attractiveness of Goal              Expectancy of Goal
            Attainment                          Attainment

                          Goal Commitment

       Goal Level                          Task Performance
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Figure 3. Hollenbeck Goal Commitment Model

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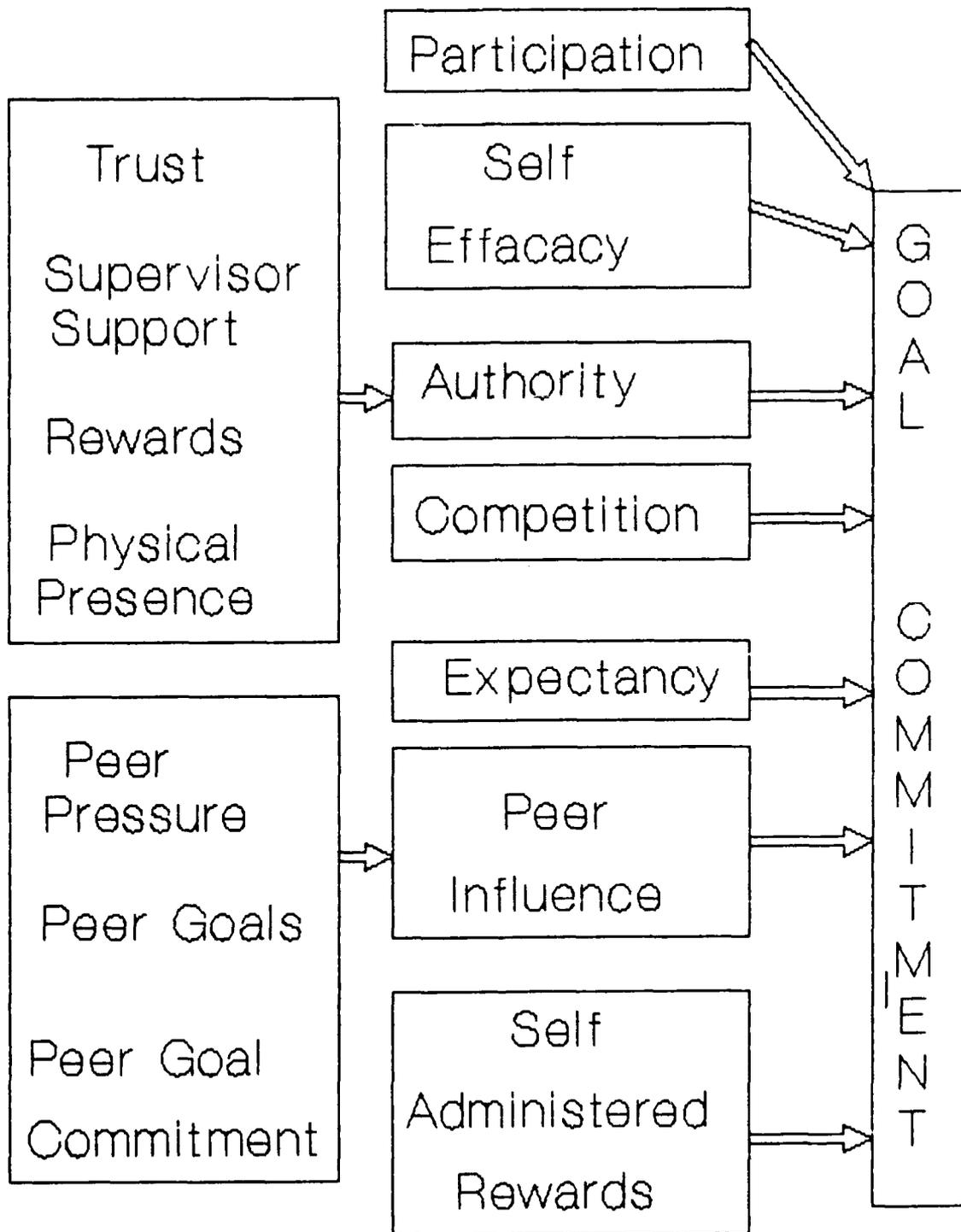
Figure 4. Proposed Goal Commitment Model

Proposed research model. As a result of these two models, the
present research proposes that while both seem adequate and complete, an
alternative model is needed. Therefore, the following model (Figure 4)
is proposed. There are obvious differences between the proposed model
and the previous models. The next section discusses the major dif-
ferences.

Differences Between the Models

Differences with the Locke model. One of the obvious differences
between the proposed model and the Locke model is the absence of
cognitive processing. Because of the limitations of this research, the
proposed model assumes cognitive processing is inherent in the ability
to commit to a set of goals. Thus, the proposed model suggests that the
determinants under question directly influence goal commitment. The
research may show that some antecedents may, in fact, be moderating
variables. These are variables which indirectly impact goal commitment.
But, again, this falls beyond the scope of the research. Stone and
Hollenbeck discuss statistical procedures for detecting moderating
variables in another work (23).

Differences with the Hollenbeck model. A major difference between
the proposed model and the Hollenbeck model is that the proposed model
concentrates on the "Expectancy of Goal Attainment" antecedents. This
was selected because of two reasons. Hollenbeck deals with the attrac-
tiveness issue in another work (8) and the expectancy aspect overlap the
Locke model to some degree.

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Types of Goal Setting Methods

Most researchers have tested hypotheses based on three types of goal setting methods: self set, participative, and assigned. These three types are discussed below in light of their impact on goal commitment.

Self set goals. When workers are left to set their own goals, the results may not be very challenging and as such are not in the best interest of the organization (21:462). As a research method, this is least interesting and consequently references to this method are generally for comparison only. The remaining two methods offer more of a challenge to research and are discussed below.

Participation. Participation is a goal setting technique that involves both the supervisor and subordinate collectively. It allows the subordinate a say in the goals that directly affect their tasks. But, it also allows the supervisor some control ensuring that an acceptable goal level is achieved. But, participation has both advantages and disadvantages.

It is the most time-consuming goal setting technique since it requires acceptance by both supervisors and subordinates. The supervisor meets with the subordinate(s) to discuss the organizational goals. (S)he seeks to gain the subordinate's acceptance or commitment to as many goals as possible. Of those goals where no commitment is made, the supervisor then seeks to "negotiate" its acceptance. But, therein lies its strongest point -- goals accepted by the subordinates may also be accepted as their own. This may result because the employee increases his or her awareness of the organizational "big picture" (14:156). Consequently, there may be more of an effort to attain the goals.

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But, participation has limits management should consider. First of all, for many, performance is virtually unaffected by accepting goals. Recall from the comment above that in order for goal commitment to be measurable it must be based on some measurable parameter. This will be discussed in more detail later. Secondly, participation may be less effective than assigned goals (21:462). The goals may be less accepted because as mentioned above, the performance level of the goal is negotiated between the supervisor and the subordinate.

Assigned goals. The final goal setting method explained in this study is goal assignment. An assigned goal is directed by leadership with little or no input from the subordinates. Of the three, assigned goals, offers the best opportunity for the organization to prosper (in whatever fashion prosperity may be defined). However, assigned goals are only effective if the workers are willing to accept them. Thus, a limitation of assigned goals is that it may lead to a lower commitment than paticipatively set goals (21:462-463).

Measuring Goal Commitment

The ability to list goal commitment determinants presupposes the ability to measure the extent to which the determinants apply. In other words, if determinants exist they must be measurable in such a way that inferences can be drawn and causal relationships shown. Locke, et al argue that commitment can be measured directly, indirectly, and by inference" (18:24).

Direct goal measurement. Directly measuring goal commitment pertains to asking respondents to directly evaluate their commitment to the goals set. For example, "To what extent do you accept the goal

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set?" (15:411). This approach also suggests the respondent is capable
of assessing varying degree of goal commitment (18:24). It may be that
some respondents would assess a level of goal commitment rather than
acknowledging they are committed or not.

The above suggest, first of all, that the subject is able to
determine whether they are committed to the goals. Secondly, it
suggests that goal commitment may either be continuous or dichotomous.
It is beyond the scope of the research, and is mentioned only to suggest
that future research investigate this phenomenon.

Indirect goal measurement. Measuring goal commitment indirectly is
a difference measure. That is, it measures differences between the
assigned goals and the personal goals of the subject (4:483). Hannon,
as cited by Locke et al, describes the indirect measure as a "discrepan-
cy between assigned goal level and the personal goal level the subject
claims actually to be trying to attain" (18:24). The disadvantage is
that it can only measure commitment to participatively or assigned
goals. But, then, it makes no sense to ask a person to set goals and
then ask them to indicate their commitment to those goals (18:24).

Finally, goal commitment can be measured by inference. For
example, a researcher would measure commitment by inferring from
observations based on productivity levels as well as other factors.
Locke cites Salancik as suggesting that someone committed to a set of
goals will try to achieve them more vigorously than one who is not
committed to a set of goals (18:24).

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Thus, commitment inferred from performance levels can be justified, if. as Locke states:

"... performance goal, level, ability, and so forth, were or can be assumed to have been controlled or randomized. Further, commitment could be inferable from goal choice, whereas lack of commitment could be inferable from goal rejection....(18:24)

In other words, given that a person has made a goal choice, a commitment to that goal occurs whereas given that someone rejects a goal, for whatever reason, it can be inferred that there is a lack of commitment.

Having established that goal commitment is measurable, a problem exists if commitment affects performance, but the person is unable to report commitment accurately. One such study involved scientists and engineers whose performance was affected by monetary rewards. The researchers' proposed solution to the problem was to use within-subject design (16:167). When Erez and Zidon (5) used this concept, they reported much greater control. The within-subject design allows the experimenter to establish various goal levels to the same subject or group at different times (5:70). This design "should be more sensitive to different degrees of commitment... because scale interpretations should be uniform across conditions" (18:25).

Commitment-Performance Relationship

Some research to date had difficulty in relating goal commitment to performance. However, more recent research focused on the goal commitment-performance relationship. However, the evidence supporting this relationship remains mixed. Locke et al caution against performance being the catch-all measure of commitment but "judicious use of in-

ference from performance seems both theoretically and empirically justified" (18:25). One study conducted by Erez and Zidon found that as goal difficulty increased, goal acceptance or goal commitment decreased corresponding to a decrease in performance (5:70,72). In contrast, studies performed by Erez, et al (6) and Locke, et al (19) found a significant effect of commitment on performance. Although each found a relationship between goal commitment and performance, research seems inconclusive concerning how goal commitment and performance are related as the degree of goal difficulty increases. Locke, et al explain that higher performance resulting from difficult goals is less likely to be accepted as an easier goal which lowers performance (18:27).

Determinants of Goal Commitment

This section discusses goal commitment determinants which can be divided into three influences or factors: external, interactive, and internal (18).

External influence. External influences consist of three factors: authority, peer influence, and external rewards (values, rewards, and expectancy). Punishment is also described but little research supports this concept as having a direct impact on goal commitment.

Authority. Authority is further delineated into supervisor support, physical presence, and trust. Thus, for the purposes of this research, authority is assumed to encompass these concepts but each concept will be tested individually. Each of these pertains to external elements with which a subject must deal.

In the military, customs and courtesies require subordinates to obey authority figures. And, surprisingly, without written rules and

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regulations, in virtually every segment of society, authority figures
are obeyed because the subordinate has judged that person to have
legitimate authority. But, having authority, alone, does not cause goal
commitment.

Interestingly, researchers, in the course of conducting research,
assume the role of an authority figure in that environment. Thus, when
the researcher assigns or participatively sets goals, he or she in-
fluences the goals the subjects choose (18:27). This phenomenon is
documented in studies in which a set of goals was assigned on one trial
but on subsequent trials the subjects were allowed to set their own
goals. Interestingly, the self set goals were as difficult as the
previously assigned goals (19:694,696; 20:243-244).

Other influences a supervisor may use to increase goal commitment,
Locke argues, are physical presence and supervisory supportiveness.
(18:28-29). Locke cites a study in which supervisors physically present
at a logging site obtained higher productivity than those crews where
supervisors did not remain (18:29). Likewise, Latham and Saari found
that the support a supervisor offers increases goal commitment and
performance. Their research examined the effects of supportive and non-
supportive behavior on each of the three goal setting methods mentioned
above. They concluded that supportiveness gave both the supervisor and
the subordinate the "confidence to set higher goals" (14:155). Further,
they argue that the key to goal commitment is the physical presence of a
supportive authority figure (14:152-155).

The amount of trust workers place in their managers, Locke argues,
is necessary for motivating employees (18:29). Earley supports this
concept in a study comparing goal commitment between English and Amer-

ican tire manufacturing workers. This experiment used similar production lines in the two countries and established similar goals -- to produce a certain number of tires per day. American and English plant representatives explained the new goals and why the change was necessary to the workers.

In the American plant, performance matched the set goal levels. However, in the English plant, production was significantly lower than the levels set until the goals were explained by an union representative. Production levels increased and eventually matched the established production levels (4:112,114,116). Oldham confirms this finding in a study where he argues that workers' perceived leadership ability of the supervisor will lead to higher performance (21:463,464,470).

Peer Influence. A second factor identified in the research is peer influence. It is a phenomenon with which most everyone can identify. Some may recall childhood days of dares and club initiations. Yet, others may recall a more sophisticated concept where, for example, in a work environment, a highly cohesive group holds production levels down because of a perceived inconsistency in organizational policy. Locke, et al, citing others, argue that group commitment is influenced by both management support and similar standards between management and each of the group members own desires (18:29).

Values, Rewards and Expectancy. Values, rewards, and expectancy are the last influences associated with the external factors. These factors are mentioned together because of their interconnectivity. That is, each is interrelated with the others. Value can be described as the worth the recipient places on an effort or reward. Rewards are

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offerings which are above and beyond what is normally earned. Expectancy ties the two concepts together. In fact, the Hollenbeck model is based on expectancy theory. Essentially, expectancy theory suggests that an employee's belief that an action will result in an expected outcome (2:103). For example, the belief that harder work or longer hours will result in a pay raise follows expectancy theory.

Locke claims that such an effort-performance relationship affects goal commitment and, thus, performance. In a study where interrelationships were tested against performance, among other predictors, Yukl and Latham found that employees who perceived achieving goals as a means to a reward also saw goal setting as a means to increase performance (25:321).

Additionally, Locke, citing an earlier study, hypothesized that the effect oi monetary incentives on performance existed because of the effect performance had on goal commitment. However, his present study suggests that since researchers studying the effects of incentives on performance did not measure goal commitment, save one, commitment may have played a role (18:30).

Punishment. Lastly, Locke examines how punishment may affect goal commitment or performance. Latham and Saari researched the goal setting process in a union setting (an area seemingly overlooked by many researchers). The study was approved by both union leaders and company management on five conditions.

The first condition required that an increase in production would not lead to layoffs or decrease in manning by not replacing employees lost through attrition. Secondly, monetary incentives could not be used for those achieving the goals as it violated union rules. Next, working

toward a goal was completely voluntary. Fourthly, not attaining a goal did not result in punishment of any kind and, finally, supervisor support was encouraged providing the employee understood condition three.

Initially, productivity increased and the program was successful because the workers believed the conditions were being met. But when production measures were changed, the union workers perceived the action as a method for punishment and called a wildcat strike (14:784-787).

Interactive Influences. Participation and competition are the two factors that make up this category. Participation seems to be connected to most research and a good predictor of goal commitment (7:213). Yet competition seems lacking in supportable research.

Participation. Participation pertains to one of the three goal setting methods mentioned above. While it seems to be a good predictor of goal commitment, more recent research focuses on the impact of goal commitment when using participation as a goal setting technique as opposed to using the goal assignment technique. Evidence provided by the research to date is mixed at best. Several studies by Latham, et al (13; 14; 17) sought to find a consistency in the results measuring goal commitment differences between participative and assigned goals.

One study examined the effects of a constant goal difficulty on assigned, participative, and "do best" or self set goals using a brain-storming task. The subjects in the participative group set the goals for the entire group. That is, once the group reached an acceptable goal, that limit was used for the assigned group as well. The results from these two groups were then compared to the "do best" group. The

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study found no significant difference in performance between the assigned and the participatively set goals (14:164-166).

Another study where the task resembled the routine of an assembly job, also examined the effects of goal setting methods on performance. Latham and Steele concluded the participation affected performance to the extent that it affected goal difficulty (15:408-409,415). Note that the overwhelmingly research supports goal setting as important; the difference comes in distinguishing assigned from participatively set goals in terms of higher performance.

Competition. Locke's original goal setting study hypothesized that competition moderates performance through a commitment to high goals (18:32). Hollenbeck and Klein support this finding. They posit that pressure in "... competitive situations may increase the desire to reach a goal beyond that which would be the case in the absence of such pressures" (7:214). Yet, sufficient research is not available to show this effect of competition on commitment.

Internal Influences. Internal influences comprise the final category in Locke's (18) proposed goal commitment model. The factors identified include expectancy of success, self efficacy, and self administered rewards.

Expectancy of Success. Locke cites others arguing that a person's perception of performing well on a task affects the choices that person selects (18). Thus, from the previous definition of expectancy, a person's expectancy of success depends on a particular action (trying hard) resulting in an expected outcome (success). One study by Erez and Zidon tested the hypothesis "that goal acceptance moderates the relationship of goal difficulty to task performance..." (5:69). In

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their study, the experimenter displayed a fictional graphic which compared the groups' scores to the scores of the alleged highly professional researchers. The subjects overwhelmingly rejected the goals and a lower performance resulted (5:71,77). The expectancy of success was non-existent. In other words, the subjects believed that success (outcome) was not possible regardless of their action (trying hard to achieve a certain number).

Self Efficacy. Self efficacy is defined as a self judgment of "how well one can execute courses of action required to deal with prospective situations" (18:32). In other words, self efficacy pertains to a person's ability to "see" himself accomplish a goal. However, self efficacy seems to be based on past performance rather than future potential (20:247). Yet, research continues to support its contribution of goal attainment to motivation (1:106). Locke, et al conclude that self efficacy was significantly related not only to the selected goal level but also those who set their own goals versus those who have goals assigned. (20:245-246). But, then, a person is not likely to set a goal that is personally perceived to be unachievable. Additionally, as Locke suggests, this relationship of self efficacy to self set goals is "consistent with previous comments regarding restriction of range...." (18:33).

Self Administered Rewards. Locke argues that perhaps self generated feedback is more instrumental in motivating workers than reward (18:33). Perhaps additional research is needed to determine its impact on commitment.

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Conclusions

This literature review began its discussion of goal commitment with a brief description of goal setting methods, followed by a review of how goal commitment could be measured and proceeded to establish a relationship between commitment and performance. It was posited that each of the measurement methods -- direct, indirect, and inference -- allowed reliable conclusions to be drawn depending on how the experiment was conducted and what variables were being measured.

Further, the literature suggest a relationship between goal commitment and performance exists and that that relationship could be measured by inference. That is, commitment to a goal is inferred by goal choice just as lack of commitment is inferred from goal rejection.

A discussion of the determinants followed. The determinants of goal commitment were categorized into three areas: external, interactive, and internal. External influences included authority, peer pressure and external reward (values, incentives and rewards, and punishment). These determinants seem to provide consistent findings but perhaps future studies would explore how supervisor effectiveness influences goal commitment.

Participation and competition were the interactive influences explored. As mentioned earlier, participation is a variable used in most goal acceptance and goal setting research because of its acceptance as a important element in that process. However, competition should be further explored to fully understand its impact on goal commitment.

Finally, the internal factors included expectancy of success, self efficacy, and self administered rewards. While each factor could be further explored, self reward seems to offer more of an insight into the goal commitment process.

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III. Methodology

This chapter outlines the methodology used to accomplish the
research effort. It begins with a discussion of the type of design best
used for the type of research needed. Having established the design
type, the research instrument is examined. Finally, when the instrument
is administered, the collected data will be analyzed. The proposed data
analysis techniques will be presented.

Research Design

The proposed antecedents identified in the previous chapter form
the basis of this research effort. As discussed in the previous chap-
ter, ten attitudinal variables will be researched in this effort. The
scope of the research is ambitious and, in order to accommodate suffi-
cient and thorough data collection, a survey instrument will be used.

However reliable as this instrument is, it is not without its
limitations. For instance, the survey instrument is limited to the acc-
uracy of the respondents. Respondents uneasy or unclear about the
purpose of the research may not respond openly or honestly, thereby,
making the accuracy suspect. Another limitation results from in a
lengthy instrument. Several variables may require numerous questions to
be asked to accurately measure the variable in question. As a result,
the instrument may be excessively long and the respondents may not
answer according to their beliefs.

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Ideally, a survey should be administered to two different test groups: a pre-test group and a target group. The pre-test group will provide results on the validity of the instrument.

Pre-test group. The pre-test group for this research is a government organization located in the midwestern United States. The group differs from the target group in that the former is composed of primarily well educated people and, thus, have higher skill levels. Approximately, 200 surveys will be administered, stratified among two directorates and further stratified within the separate divisions within each directorate.

Target population. The target population is a government organization composed of primarily wage scale, or hourly workers. This organization is an Air Force organization where many quality pilot programs begin. The survey population includes 400-500 people in various paygrades chosen at random. The random selection would utilize the stratified approach where each strata would represent a different function or division withi. the organization. For example 45-55 people total would be randomly selected from the manufacturing division and another 45-50 people from engineering, etc.

Data Analysis

The next few sections discuss the types of data analysis which determines the utility of the survey instrument. Validation and reliability of the research instrument allow the researcher to use the collected data with more confidence.

Survey validation. The survey could be validated by, first, ensuring that the survey asks only necessary but sufficient items to

measure the determinants mentioned above. (Note: The list of items is available in Appendix A). Also, it should be noted that the instrument was accomplished on concert with another research effort and some of the items which do not appear pertinent, in fact, are not. Further, another validation technique and probably most important for this research is criterion related validity. This involves constructing the survey in such a way that outcomes can be predicted.

Reliability. Another concern is the reliability of the items. If a question purports to measure goal commitment by participation, then, any answer given by that question should reliably report whether or not an individual is committed to a set of goals. For this effort, a subroutine used to calculate Crombach's alpha will be used to determine the validity of the questions.

Many questions were derived from surveys other researchers have used. A list of the variables, the corresponding question numbers and the associated reference are listed in Table I. Many of the referenced questions were used in specific research efforts, consequently, the reliability (Crombach's alpha) may not be as accurate in this effort as in the research cited. Therefore, the reliabilities will be calculated on both the pre-test and the target and presented in the following chapter.

Additionally, Table I lists the concepts and the corresponding items which purportedly will measure that concept. When a determinant has a low reliability (<0.65), a factor analysis may be needed to align the items so as to possibly improve the reliability.

Factor analysis. This method is designed to group variables (in this case items in a survey) which are highly correlated (10:378,379).

Factor analysis. This method is designed to group variables (in this case items in a survey) which are highly correlated (11:378,379). Grouping variables decreases the number of items which must be analyzed. This allows the researcher to make observations based on a fewer number, but common variables. The point should be made and as Kachigan cautions the method of analysis "involves a great deal of personal judgment" (11:399).

Consider the survey presented in Appendix A. Table I provides an initial grouping of the variables. Some of the groups are based on previous, reliable research, while other items were modified from other works, with the remainder based on theoretical concepts. The responses may be such that some items in one variable, say, participation, are more highly correlated with items in another, say, self efficacy. The researcher must then decide if the item itself was a good measure. If it is, the researcher groups the item(s) with those which it is highly correlated with. For further information, Kachigan provides an excellent explanation of factor analysis (11:377-402).

Table I. Sources for the Survey Instrument

Variable	Item #	Source
Participation	23-25	Latham & Sarri (13)
Authority		
Trust	56-58	Latham & Steele (15)
Supervisor support	44-55	Latham & Steele (15)
Rewards	35-39*,	Ivancevich & McMahon (9)
	40*,	Yukl & Latham (25)
	41-44*	Self-developed
Physical Presence	59-60	Latham & Steele (15)
Competition	4-6*	Self-developed
Peer Influence		
Peer competition	76-77	Erez & Zidon (5)
Peer goal commitment	78-80	Self-developed
Expectancy	28-33*	Terborg (24)
Self-efficacy	69-75,	Bandura & Cervone (1),
	10*, 15*	Locke et al, (20)
Self-administered Rewards	45-50*	Ivancevich & McMahon (9)
Goal Commitment	78, 80	Self Developed

* Denotes questions in Part II of survey

Statistical Significance Tests

The data from the survey will be used to test the hypotheses formulated from the investigative questions listed in chapter two. Statistical tests, such as correlational analysis and

multiple linear regression will be used to analyze the results of the survey. Each of these techniques are explained in the paragraphs that follow.

Correlational analysis. Correlational analysis, as described by Kachigan (11), is the tendency of a one variable to varying as another variable changes. Additionally, variables can be correlated either positively or negatively. For example, two variables that are positively correlated vary together. That is, as one increases the other increases and as one variable decreases the other decreases. Negatively correlated variables do the opposite; that is, as one variable increases the other decreases and as the one decreases the other increases.

Correlation, mathematically, is the ratio of the explained variance to the unexplained and has a range from -1 to +1 with the higher correlations moving from zero toward 1. Realistically, the variances sum to a fixed value. Thus, the unexplained and the explained variances must and will sum to that total. A researcher attempts, through statistical tests, to explain as much variance as possible, thereby reducing the unexplained variance. The less the unexplained variance, the greater the predictability of the model.

In most cases, the correlation has a relative range as well. In behavioral sciences, a large amount (up to 40-50%) of unexplained variance seems common. For example, a researcher may have a set of extremely low correlations but predicting quite accurately a given set of parameters. Consequently, for this effort, correlations are expected to be greater than +/-0.5. But, correlational analysis has both advantages and disadvantages.

Advantages. When two independent variables are highly correlated with each other, in a sense, one may be substituted for another. Thus, if external rewards and participation are highly correlated, a commander, or supervisor may use participation methods to increase goal commitment. Since both are highly correlated (implying each yields the same result), participation would be a useful, less costly method for obtaining goal commitment.

Limitations. One of the limitations of correlational analysis lies in the fact that correlation can determined only between two variables at one time. If three or four variables are collectively highly correlated but separately less correlated, this analysis fails. It would not show the collinearity of the three or four variables; in fact, it would show that none were correlated. Another disadvantage is that it can not isolate the effects of other variables, such as moderating variables. In some cases, two variables may be highly correlated with each other but the cause may be another variable which can not be accounted for with correlational analysis. Detecting moderating variables requires sophisticated regression analysis. The reader is referred to Stone's research for an explanation of detecting moderating variables (23). However, for this reason, regression analysis procedure is used to detect multiple correlations. It is discussed in the next section.

Still, another and more important disadvantage is its inability to describe the relationship between the variables. Knowing that antecedents are related is important; it indicates which are variables are more relatively critical. But, describing the relationship so that it can be tailored to an individual organization is perhaps more important.

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This point will become more apparent in a later chapter. Kachigan discusses correlational analysis in more detail (11:195-237).

Multiple linear regression. Given that a relationship exists between goal commitment and the predictor variables, the utility comes in describing the relationship. Multiple linear regression is useful in describing a relationship between a dependent variable, in this case goal commitment and two or more independent variables. It is also useful for predicting goal commitment, given that the researcher also has knowledge of the predictor variables.

A multiple linear regression (MLR), mathematically, is given in the form of a linear equation. Higher order equations can and do exists. However, because of the complexity of this equation, the researcher is responsible for analyzing and explaining the higher order equation. For example, the coefficients (explained below) of participation and peer influence when multiplied together explain most of the variance. However, this relationship would be difficult to explain much less model. Therefore, care should be taken when using MLR in that the final equation must comprehendible in order to be useful to commanders.

According to Kachigan, a MLR equation consists of the independent or predictor variables which are multiplied by some factor, called a beta coefficient. The sum of the predictor variables equals the independent or criterion variable. Furthermore, Kachigan writes that the independent variables should not be correlated with each other. Otherwise, when the predictors are correlated with each other, it is difficult to determine the contribution that a variable has on the explained variance (11:260-261) Of course, the utility of knowing each variable's contribution allows management to determine an appropriate

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action (initiate a program, modify management philosophy, etc.) so that an increase in goal commitment occurs.

Beta coefficients. The beta coefficients, mentioned above, explain the relative importance of its corresponding predictor to the criterion variable. For example, with goal commitment being the criterion variable, competition, self efficacy, and physical presence have beta coefficients of 0.41, 0.06, and -0.17, respectively. The betas tell the researcher that competition "has a more important contribution to [goal commitment] than the other two predictor variables" (11:262). Also note that physical presence (beta = -0.17) has a negative impact on goal commitment. In other words, the more a supervisor is present, the lower the commitment a worker will have. A complete discussion of regression analysis is available in Kachigan (11:258-269).

Closing

The data will be analyzed not only according to the demographics and collinearity but also analyzed on the basis of which determinants when added together form the optimum mix of predictors (regression analysis). Demographic analysis includes analysis of goal commitment according to age, sex, pay grade, years in service and by division. The next chapter discusses the results from both the pre-test and the target survey instruments.

IV. Results of the Data Analysis

Generally, the analyses were concerned with validating the instrument through reliability procedures and verifying the proposed goal commitment model through correlation and regression analysis. Before discussing the reliability of the survey instrument, this chapter opens with a brief review of the proposed research effort. Content validity accomplished through factor analyses and reliability procedures is then discussed followed by an examination of the correlational results. In particular, the discussion centers on the correlation between the dependent variable, goal commitment, and the proposed independent or criterion variables. Finally, the results of the regression procedures are analyzed and the analyses are summarized.

Research Review

In today's dynamic, synergistic markets organizations are faced with operating at the optimal efficiency and quality levels. One of many interconnected methods for accomplishing that objective is the necessity to obtain a high level of commitment to the organizational goals. Thus far, research discussed the literature and proposed research models aimed at achieving that objective. Further, a methodology for validating the models was proposed.

Chapter one introduced the basic research problem facing many organizations today. The problem is to increase the level of organizational performance. One of the difficulties is that unless a commitment

compete. In chapter two, a review of the literature explored the re-
lationship of goal commitment to performance and resulting models
proposed by two researchers: Locke (18) and Hollenbeck (7). From these
models, an alternative model was proposed incorporating the antecedents
of both models which are supported by the literature.

In chapter three, the methodology for validating the model con-
sisted of a series of procedures that began with validating the survey
instrument itself. The next steps in the methodology involved deter-
mining the reliability of the instrument, identifying collinearity
problems through a correlation analysis, and validating the proposed
model using a regression analysis. The results of the methodology are
presented below. In each of these steps, the SPSS[X] (22) computer
program was used and the results which could not be summarized within
the text were placed in Appendices B-D.

Instrument Validity

In order to determine whether the data are accurate and representa-
tive, an instrument or the item within the instrument should be vali-
dated. Validated items are those items which consistently measure the
concept it purports to measure. Short of validated items, the re-
searcher is left with using modified or self developed items which are
not validated. In this case, the item should be checked with a reli-
ability procedure to determine its reliability. A reliable method of
measurement is crucial to verifying the proposed model. If the item or
groups of items forming a concept are unreliable, the measure should not
be used in subsequent data analysis. To continue to using unreliable
data makes concluding inferences suspect. It is preferable to modify

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the item(s) and use in another research effort. The most reliable
measurement method may be to use existing survey items in which reli-
abilities are known. The problem is that most research is unique in
that often items must be modified in order to fit the current effort.

Table II summarizes the type of analyses used in this research on
the different scales. For example, those scales where the items were
from other sources directly, a factor analysis was not used. Cons-
equently, since some scales were drawn from other sources, the focus of
this section is to verify those items modified from other sources or
unique (research developed) to this research.

As shown, trust, supervisor support, rewards, and the expectancy
scales were published in other research (Table I) and, consequently, are
not considered in this analysis. In order to determine the validity of
the instrument, a factor analysis procedure in SPSS-X was used and the
results are tabulated in Table III.

Factor analysis. Initially, it was not anticipated that factor
analysis would be used. Recall, however, its discussion in Chapter
three. Factor analysis would be used is a concept or measure had a low
reliability. Such was the case with peer influence and physical
presence. More critically, however, was the low reliability of the
dependent variable, goal commitment. It's initial reliability
(Cromb ch's alpha) was 0.26. Obviously, with such a low reliability for
the dependent variable, the research would have progressed no further.

But, with the use of the factor analysis procedure in
SPSS-X, the new alignment allowed the items to be grouped into more
reliable measures.

Table II. Types of Data Analysis

	1	2	3	4
Independent				
Trust		X	X	X
Supervisor Support	X	X	X	
Rewards		X	X	X
Physical Presence	X	X		
Peer Influence	X	X		
Participation	X	X	X	X
Competition	X	X	X	X
Expectancy		X	X	X
Self Efficacy	X	X	X	X
Self Reward	X	X	X	X
Dependent				
Goal Commitment	X	X	X	X

LEGEND:
1 - Factor Analysis
2 - Reliability
3 - Correlational Analysis
4 - Regression Analysis

In determining which items belonged to a specific group, a factor greater that 0.45 was used as a threshold. Additionally, the item must be dominant in one factor. That is, an item is considered attached to a factor when the number is greater than 0.45 within the column, but, also row-wise, the item must also be dominate in that factor as well.

For example, if item 30 has a factor of 0.64 in group 1, then it is considered to be a contender for that group. But, in order for it to assured a place within group 1, the item must be more dominant in factor 1 than any of the other groups. If, in group 2, item 30 is 0.79, then item 30 would no longer be given consideration for group 1, but group 2, instead. If item 30, had a value of 0.66 in group 2, then consideration

would be given to the structure of the item in light of the other items that make up the two groups.

The results of the factor analysis procedure on the remaining seven factors: self efficacy, participation, self reward, competition, physical presence, peer influence, and goal commitment suggests that all scales were valid except for physical presence and peer influence. The numbers for the designed items did not support the scales purported to measure. Nor did a factor analysis prove beneficial for these two measures.

Table IV which lists the variables, the items originally designed to measure that scale, and the design as a result of the factor analysis. Notice that participation added two items and goal commitment added one. Self efficacy and self administered rewards contained items which were not accurate measures and as such reduced the reliability. Finally, physical presence and peer influence also contained items which were not accurate or reliable, and neither could a factor analysis align the items such that these two measures would be reliable.

Table III. Factor Analysis

FACTORS

ITEM #	1	2	3	4	5	6	7
23	-.039	.749*	.043	-.006	.077	.102	.172
24	.019	.783*	.005	-.019	.304	.134	.087
25	.044	.798*	.075	-.122	.186	.151	.061
59	-.005	.197	.282	.008	.377**	.157	.337
60	.015	.003	.170	.238	.598**	.077	.144
69	.510*	.137	.067	.001	-.052	.274	.203
70	.840*	.094	.017	.079	-.069	-.052	-.070
71	.783*	.083	-.015	.147	-.051	-.097	-.042
72	.833*	.015	.040	-.010	.055	.029	-.050
73	.787*	-.046	-.021	-.028	.042	-.026	-.029
74	.651*	-.003	-.012	-.119	-.231	.253	.238
75	-.178	-.034	-.043	-.058	.615**	-.018	
76	-.009	.035	-.035	.124	.543**	.185	-.099
77	.279	.090	.094	-.327	-.302	.343	.292
78	.003	.015	.077	-.051	.106	.755*	.090
79	.193	-.094	.024	-.089	.342	-.487	.107
80	.173	.089	.009	.003	.147	.726*	.056

From Part II of survey:

ITEM #	1	2	3	4	5	6	7
1	.113	.643*	.229	.179	-.194	-.045	.053
2	-.085	-.414	-.098	-.027	.247	-.028	-.106
3	.065	.659*	.154	.243	-.215	-.154	-.057
4	.002	.058	-.063	.851*	.071	-.060	.021
5	-.061	.069	-.019	.845*	.110	-.004	.109
6	.159	.017	-.017	.613*	.037	.052	.110
10	.114	.083	.018	.020	-.011	.072	.751**
15	-.011	.120	.028	.202	.073	.043	.746**
45	.129	.181	.474*	-.055	-.364	-.146	.250
46	-.052	.138	.818*	.087	-.022	.072	-.021
47	.014	.101	.794*	-.142	.014	-.067	-.147
48	-.075	.099	.413*	.336	.288	.007	.197
49	.171	-.136	.326	-.130	.089	.056	-.448
50	.036	.115	.762*	-.056	.077	.125	.029

LEGEND:
* -- Identifies items within each group
** -- Items not forming designed scales
GROUP:

1 -- Self efficacy	5 -- indeterminate
2 -- Participation	6 -- Goal Commitment
3 -- Self Reward	7 -- indeterminate
4 -- Competition	

Table IV. Survey Instrument Analysis

Variable	Question #	
	Original Design	Final Design
Participation	23-25	23-25, 1*,3*
Authority		
Trust	56-58	56-58
Supervisor Support	44-55	44-55
Rewards	34-44*	34-44
Physical Presence	59-60	*****
Competition	4-6*	4-6*
Peer Influence		
Peer Competition	76-77	*****
Peer Goal Commitment	78-80	*****
Expectancy	28-33*	28-33*
Self Efficacy	69-75, 10*,15*	69-74
Self-administered Rewards	45-50*	45-47*
Goal Commitment	80	78,80

* Denotes questions from Part II of survey.

***** Indeterminate from factor analysis

Instrument Reliability

Reliability is a confidence measure. It answers the question of how reliable an item or scale is in terms of a confidence level. For instance, a scale that has a reliability factor of 0.85 suggests that the items making up that scale are 85% accurate. Therefore, for obvious reasons, scales that are highly reliable increase the researcher's confidence level to proceed to subsequent analyses. In this case, the results, tabulated in Table 5, list both the pre-test sample as well as the target population.

Table V. Pre-test Reliabiities
(Crombach's alpha)

Scales	Pre-test (N= 114)	Sample Population (N= 306)
Determinants		
Trust	.91	.78
Supervisor support	.94	.93
Rewards	.80	.82
Physical Presence	.47	.51
Peer Influence	.42	.15
Participation	.73	.87
Competition	.77	.85
Expectancy	.90	.74
Self Efficacy	.83	.86
Self Reward	.74	.78
Dependent		
Goal Commitment	.63	.66

The data show that the items for the peer influence and physical presence scales were neither measurable nor reliable with this instrument. However, the remaining scales appear to be both valid and reliable measures of goal commitment and that goal commitment, itself, is reliably measurable.

Correlational Analysis

The next phase of the analysis is divided into two procedures. The first is to examine the correlations between each of the scales and the correlations between the scales and goal commitment. Specifically, correlational analysis will expose collinearity problems that may exists between the variables. The second procedure will show which scales are more highly correlated with goal commitment.

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The results are tabulated in tables VI and VII for the correlations between the scales for the pretest and target populations, respectively and table VIII summarizes the correlations between the scales and goal commitment. The data within the tables contain the correlation coefficient, the sample size adjusted for missing cases, and the p-value. For this analysis, scales were considered significantly correlated if the p-value is greater than 0.025.

Between scale analysis of the pre-test group. For the test group, possible collinearity problems may exist with self administered rewards, self efficacy, and peer influence. But, peer influence, earlier, did not prove to be a reliable scale and, thus, is not considered a contaminant to the research. The remaining scales may pose a somewhat less serious collinearity threat, but the possibility remains.

Between scale analysis of the target group. The targeted group has considerable less of a collinearity problem. Most variables may be correlated with, at most, two or three other variables. The concern is that where the scales are correlated, the p-values are quite significant. In some cases, as much as 0.48. The next section discusses the correlations between the scales goal commitment.

Table VI. Correlational Analysis for the Pre-test Group

	1	2	3	4	5	6	7	8	9
1									
2	.3032 (112) P= .001								
3	.2462 (111) P= .005	.1891 (110) P= .024							
4	.4121 (113) P= .000	.3225 (111) P= .000	.1447 (110) P= .066*						
5	.1234 (112) P=.098*	.1547 (111) P=.053*	.0818 (110) P=.198*	-.0992 (111) P=.150*					
6	.3376 (113) P= .000	.1492 (112) P=.058*	.2219 (111) P= .010	.0562 (112) P=.278*	.2322 (112) P= .007				
7	.0236 (114) P=.402*	-.0706 (112) P=.230*	.2321 (111) P= .007	.1224 (113) P=.098*	-.1065 (112) P=.132*	.0608 (113) P=.261*			
8	.2561 (113) P= .003	.1421 (112) P=.068*	.4353 (111) P= .000	-.1002 (112) P=.147*	.0892 (112) P=.175*	.4119 (113) P= .000	.0665 (113) P=.242*		
9	.0825 (111) P=.195*	.2377 (110) P=.006	.1626 (109) P=.046*	.1016 (110) P=.145*	.0480 (111) P=.309*	.1423 (111) P=.068*	-.0221 (111) P=.409*	.1223 (111) P=.100*	
10	.0458 (113) P=.315*	.0872 (111) P=.181*	-.0183 (110) P=.425*	.0846 (112) P=.188*	-.0390 (111) P=.342*	.1070 (112) P=.131*	-.0343 (113) P=.359*	.0040 (112) P=.483*	.1758 (110) P=.033*

LEGEND:
- 1 – Trust
- 2 – Supervisor Support
- 3 – Rewards
- 4 – Physical Presence**
- 5 – Peer Influence**
- 6 – Participation
- 7 – Competition
- 8 – Expectancy
- 9 – Self Efficacy
- 10 – Self Administered Rewards

* – p>.025 (1-tailed test)   ** – Questionable reliability

Table VII. Corrrelational Analysis for the Survey Population

	1	2	3	4	5	6	7	8	9
1									
2	.3271 (294) P= .000								
3	.2949 (300) P= .000	.1452 (288) P= .007							
4	.3643 (303) P= .000	.1638 (292) P= .003	.2459 (297) P= .000						
5	-.0244 (300) P= .337*	.1358 (288) P= .011	.0248 (295) P= .336*	.1446 (297) P= .006					
6	.3377 (272) P= .000	.2587 (269) P= .000	.2752 (268) P= .000	.1843 (270) P= .001	.0581 (266) P= .173*				
7	.0264 (303) P= .324*	.0023 (291) P= .484*	.1561 (298) P= .003	.1948 (297) P= .000	-.0187 (300) P= .374*	.1187 (272) P= .025			
8	.1559 (305) P= .003	.1332 (293) P= .011	.0803 (300) P= .083*	.2123 (302) P= .000	.1424 (299) P= .007	.3762 (272) P= .000	.0982 (303) P= .044*		
9	.0860 (299) P= .069*	.2089 (287) P= .000	.2126 (294) P= .000	.0138 (296) P= .407*	.0121 (298) P= .417*	.0885 (265) P= .075*	-.0350 (296) P= .274*	-.0024 (298) P= .484*	
10	.0452 (302) P= .217*	.1219 (291) P= .019	.1281 (298) P= .014	.1777 (299) P= .001	.0435 (297) P= .228*	.2328 (270) P= .000	-.0573 (300) P= .161*	.1618 (302) P= .002	.0828 (296) P= .078*

LEGEND:

1 - Trust	6 - Participation
2 - Supervisor Support	7 - Competition
3 - Rewards	8 - Expectancy
4 - Physical Presence**	9 - Self Efficacy
5 - Peer Influence**	10 - Self Administered Rewards

* - p < 0.025 (one-tailed test)   ** - Questionable Reliability

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Correlations between the scales and goal commitment.   In the
table below are the correlations between the independent variables and
goal commitment. The data are arranged as in previous tables where the
correlation coefficient, the sample size adjusted for missing cases, and
the p-value (one-tailed test) are given. Also as before, a scale is
considered to be significantly correlated if the p-value is greater than
0.025. Accepting this level of significance yields a confidence factor
of 95%. The results reveal that for both groups self administered
rewards, and competition are significantly correlated with goal commit-
ment. Expectancy is significantly correlated for the pre-test group.

Using the results from the three tables, a researcher can conclude
that with competition and self administered rewards be correlated with
goal commitment and these predictors being correlated with other
predictors, a preliminary regression equation can not be drawn.

Table VIII. Corrrelational Analysis with Goal Commitment

Scale	Pre-Test	Target
Trust	.2695 (113) P= .002	.2805 (295) P= .000
Supervisor Support	.2549 (111) P= .003	.1454 (283) P= .007
Rewards	.2338 (110) P= .007	.3074 (290) P= 000
Physical Presence*	.0984 (112) P= .151	.1318 (292) P= .012
Peer Influence*	.1457 (111) P= .064**	.1613 (294) P= .003
Participation	.2635 (112) P= .002	.1276 (261) P= .020
Competition	.1378 (113) P= 0.73**	-.0551 (292) P= .174**
Expectancy	.1591 (112) P= .047**	.1215 (294) P= 0.19
Self Efficacy	.3817 (110) P= .000	.1471 (293) P= .006
Self Administered Rewards	-.0138 (112) P= .443**	.1471 (292) P= .208**

LEGEND:
    * - Questionable Reliability
    ** - p < 0.025 (one-tailed test)

Regression Analysis

This section discusses the results of the regression procedure. Utilizing the results from the previous analyses, this procedure formally documents the results of this research in relation to the proposed model. The section begins with an introduction to the type of regression procedure used and discusses the results from that procedure in relation to both test groups. Finally, this section concludes with a discussion of the results in relation to the proposed model.

The regression analysis uses the regression procedure from the SPSS-X computer program (22:662-686). Based on the results from the correlation analysis, a stepwise regression was used in order to obtain the optimal regression equation and, thus, account for as much explained variance as possible. The explained variance is that variance for which there is a known variation and can, thus, be controlled. This variance is directly proportional to the adjusted R-square (R^2) value as shown is Table IX.

Another important statistic from the regression procedure is the beta coefficients for each of the determinants in the regression equation. Recall from chapter three, this statistic tells the relative importance of the variable in relation to the others as a variable enters the equation. Appendix E contains the final results from the step-wise regression procedure; the results summarized in Table IX.

The following table lists the scales that entered the regression equation, as well as the order in which each entered. Additionally, the corresponding adjusted R^2 value is given.

Table IX. Adjusted R-square for the Stepwise Regression

Group/Step/Variable Entered	Adjusted R^2	Beta Coefficient
Pre-Test		
1. Self Efficacy	0.4012	.40
2. Participation	0.4667*	.24
Target		
1. Rewards	0.2679	.28
2. Self Efficacy	0.3499	.23
3. Trust	0.3890	.18
4. Expectancy	0.4044	.11
5. Competition	0.4182*	-.11

* Adjusted R^2 for the regression equation.

Note that in both survey groups, the adjusted R^2 explains about 40-45% of the variance suggesting first, that the proposed model is consistent in measuring goal commitment. Secondly, the model, as developed, reflects an accurate description of the determinants which influence goal commitment. The next section describes the regression analysis for each of the surveyed groups.

Pre-test group. In the last analysis, the correlations suggested that for this group, self administered rewards, expectancy, and competition were significantly correlated with goal commitment. As such, these determinants might be expected to enter the regression equation. On the other hand, participation and self efficacy had a higher correlation coefficient and, thus, would explain more of the variance from the true regression equation which is what occurred. Also recall that for this

group, collinearity problems existed with self administered rewards as well as the other variables.

Target group. An analysis of the determinant correlations showed that competition and self administered rewards were significantly correlated with goal commitment. However, as in the pre-test group, these did not explain a significant amount of variance. Also for this group, competition was negatively correlated. Thus, the more competition a worker experiences, the less committed to the organization (s)he is. Finally, the results of the step-wise regression is that rewards, self efficacy, trust, expectancy and competition explains 41% of the variance from the true regression equation.

Model Validation

The previous analyses allows the research to continue to analyzing the model proposed in an earlier chapter. This section uses those results to establish the correctness of the model or modify such that it reflects the data supporting this effort.

One of the first issues to be addressed is the inability to accurately measure peer influence and physical presence. These two may influence goal commitment but this effort was unable to measure them significantly and reliably. The following figure represents the goal commitment model as supported by the data analyses.
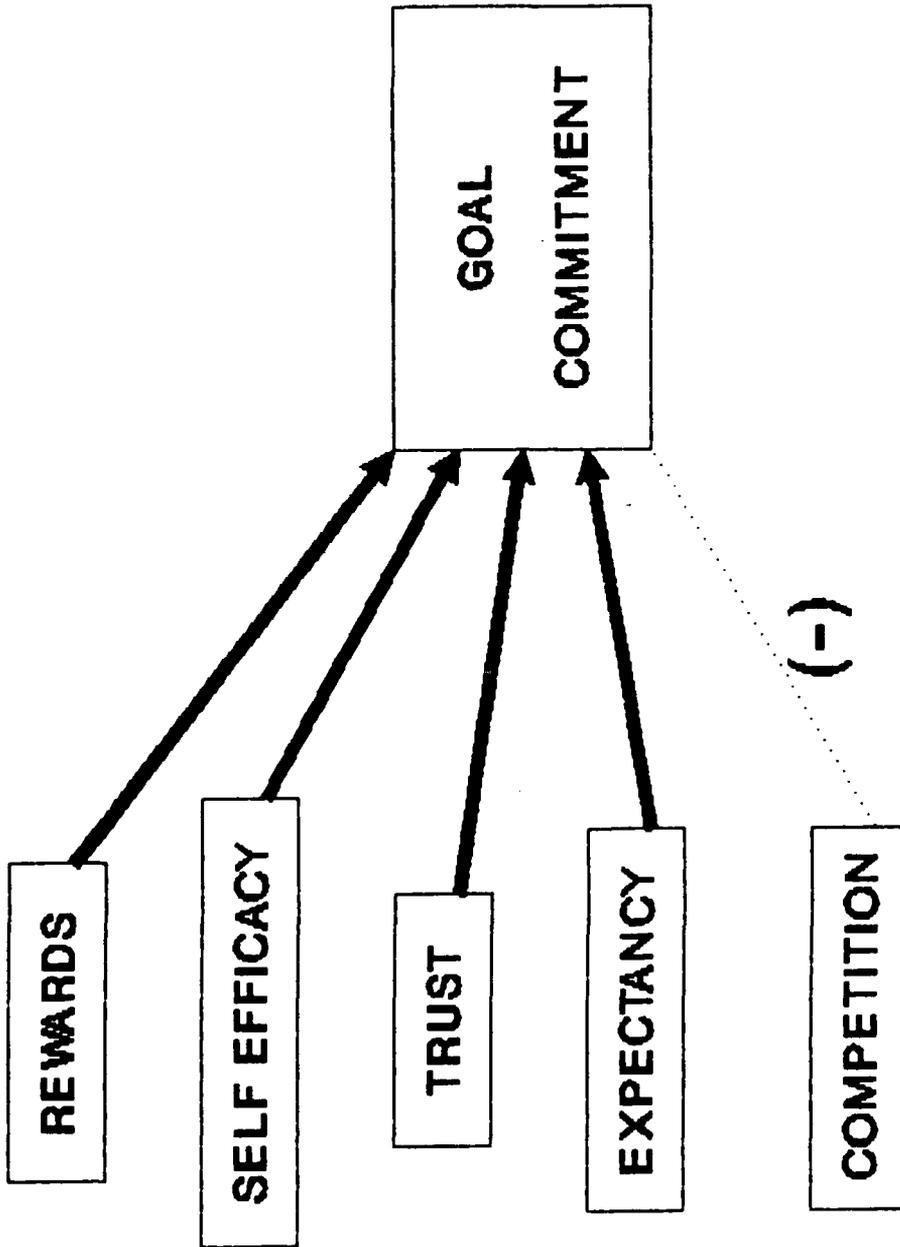
FIGURE 5. Resultant Goal Commitment Model

V. Recommendations and Conclusions

This research was aimed at defining a goal commitment model for use by any organization. This chapter, first, discusses areas for future research. Secondly, and more importantly, recommendations for organizations to use to obtain goal commitment are discussed.

Research Recommendations

The following recommendations for future research are based on several factors. First, evidence from the literature but beyond the scope of this effort supported different areas which should be explored. Secondly, observations from the results of the current research opened areas which would enhance the study of goal commitment.

An area seemingly overlooked by most researchers is formalizing a definition for goal commitment. The lack of a formal definition forces the researcher to acknowledge the existence of goal commitment and subsequently define it in terms of the research presented. Research has evolved in this area from the broad subject of goal setting to specific goal setting techniques to recognizing that setting goals is no assurance of a commitment to those goals.

Secondly, research should address goal commitment in terms of a continuum or a dichotomy. Specifically, research should address whether goal commitment is continuous or not or if it is under certain circumstances. If it is dichotomous, limits may exist. If it is continuous, perhaps, limits also exist but may not be known. The next logical step would be to model goal commitment in terms of its limits.

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Before addressing specific recommendations in achieving goal commitment, a final research proposal is suggested. As brought out in this research, the model may change from one test group to another depending on the groups' demographics. In this case, the groups differed in terms of rank structure, skill level, education level, length of employment, etc. Perhaps, goal commitment may be based on contingency theory, as well. If so, research should determine the conditions under which a model changes.

Practical Program Ideas for Managers and Commanders

Using the final goal commitment model as a reference, several options are available for supervisors and commanders to use in order to obtain a commitment to their organizational goals. However, a precursor to goal commitment, as mentioned earlier, is the establishment of goals. Thus, goal setting is discussed briefly; several books are also available.

Goal setting. The current research suggests that goals should be both attainable and practical. As a leader, practicality and attainability should be balanced, however, with difficulty. Therefore, the first step the leader should take is to establish reasonable goals.

The next step depends on the type of goal setting method the leader chooses. If possible, goals should be participatively set. When this method is used, ambiguous goals can be identified and cleared. This will help alleviate future problems. Also, as mentioned earlier, participatively set goals allows the subordinate to feel much more apart of the organization. But, recall, that this method is time consuming and, therefore, the leader should allow as much lead time as possible. If

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goals are to be participatively set, the leader should meet with the subordinate(s) and finalize the goals for the specified period of time.

Once the goals are finalized-- regardless of the type of goal setting method, the goals should be publicized-- the leader should provide continuous feedback to the subordinates. The feedback is crucial successfully attaining the established goals. Not only does it update the subordinate on the progress, but, it also allows the subordinate to respond to problem areas preventing goal attainment.

The above summarize steps to setting goals and their impact on goal attainment. Certainly, this does not comprise a comprehensive goal setting method but it gives the leader an indication the impact it may have on the organization. The reader should reference Locke and Latham's book on goal setting (17).

The next series of sections address specific issues which leaders can use to increase a commitment to their goals. The sections follow the concepts named in the resulting goal commitment model. Also critical to institutionalizing these programs is educating the worker. Education can take the form of training, staff meetings. Regardless, these concepts can be institutionalized through well developed programs followed by educating the personnel.

Rewards. Reward programs are important and are an integral part of most organizations. Most programs, however, reward workers for a certain performance and not necessarily for helping the organization attain specific goals. This is not to suggest that these programs be abandoned, but, rather, be enhanced to include rewards for goal attainment. Obviously, organizations can institutionalize program with as much or as little funds as necessary. But, the amount is secondary to

the initiation of a good, management-backed program. Reward programs can be set up so that personnel are rewarded on a period, job, or per goal basis.

Employees rewarded on a periodic basis have specific milestones or checkpoints, established when the goals were set, where progress is checked with respect the goals. This particular program works well for tasks of projects where uncertainty and high costs dominate. For example, a goal might be to complete 30% of the project in the next quarter. The supervisor provides feedback bi-weekly so adjustments can be made as needed, and at the end of the period, the goals are evaluated. If successful, the team is rewarded. Rewards can range from a meager pay raise, time off, or special recognition at a company function. If the company has no function scheduled within that period, schedule one.

Self efficacy. This factor is more complex and, consequently, more difficult to address. The difficulty results because, by definition, self efficacy is an internal mechanism. It is the worker who must acknowledge the ability to attain the organizational goals. However, there may be some actions the leader can take to encourage his or her subordinates.

One of the more useful techniques is the feedback program. Obviously, this depends heavily on the type of organizational structure, but, for the most part, feedback which is continuous is helpful in getting the worker to "see" goal attainment. Three concepts were identified above. First is the feedback program, secondly is the organizational type, and lastly is "seeing" of goal attainment. They are interrelated but, each is addressed below.

Feedback works well for certain skill levels. Engineers and scientist are known to not require as much feedback as technicians. A supervisor should consider skill level when implementing a feedback program. Tied closely to skill level is the organizational structure. Feedback programs that do not have the support of the commander or president of the company, will generally have more problems. This is true, particularly when the majority of the work force have a lower skill level.

By now, it is obvious that certain circumstances can inhibit goal commitment, regardless of the feedback program. The different types of conditions are too numerous to mentioned in the section, suffice to say, that management should make a comprehensive evaluation prior to starting any feedback program. Given the above, how is a feedback program going to help goal commitment?

The structure of the feedback program can be tailored to meet the organization's specific goals. Just as rewards are given for superior or sustained performance and goal attainment, so can feedback be structured. The objective with feedback in this case, however, is to help the employee increase in self efficacy. In other words, the objective is to help the worker "see" the accomplishment and the attain- ment of previous goals. The frequency and the amount of feedback depend on the points presented above: skill level, organizational structure, and the comprehension of the worker to "see" previous goal attainment.

When the supervisor meets with the worker, some ideas worth remembering include how well the employee has performed at various stages. The idea is to help him or her to "sse" the progress they have made in the past time periods. As the employee, the supervisor should

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increase their responsibility. This increase in responsibility should also be pointed out to the employee when feedback is given. The point is not to make supervisors social workers, but, rather, to improve their commitment to the organizational goals.

Trust. This concept and the next, expectancy, are closely related in the sense that it is the leader who has virtually complete control. Trust is an action that begins with the manager, the supervisor, or the commander. Trust influences goal commitment when the worker knows the leader can be trusted and the worker can be confident in that trust. Gaining that trust is an individual program, as well.

Examples of building trust include consistency, feedback, support. etc. Consistency suggests that the leader is consistent when dealing with each worker, not patronizing, or favoring anyone. This is true regardless of the type of interaction.

Feedback suggest that the frequency and the timing of feedback is critical. In the previous two factors, feedback played an important role. However, feedback in this instance pertains to the quality of feedback. For example, if a worker is admonished, the action should be taken shortly after the event. The same is true for praise.

Finally, support suggests that leaders are supportive of their subordinates. In layman's terms, it is referred to as "taking care of your people". A leader desiring to build trust, makes an effort to ensure that the worker is clear regarding these three factors.

Expectancy. Like self efficacy, mentioned above, this influence is determined by the worker. However, in order for that worker to raise his or her expectations, programs must exist for the worker to strive for. In other words, in order for the worker to work harder if it is

expected that a pay raise is possible, then the program for obtaining pay raises must exist.

Likewise, in order for the worker to have expectations met regarding a commitment to the organizational goals, the structure (incentive) must be in place. Workers will tend to look for programs that lead to promotions, pay raises, increases in skill level, perhaps, even autonomy in tasks, as well as decision making. Therefore, it is incumbent on the leader, institutionalizing incentives, to ensure their reasonableness, and attainability. Otherwise, the programs become meaningless in the eyes of the worker, and may reject the goals previously committed to.

Competition. Since this factor negatively impacts goal commitment, it deserves special consideration. This effort researched competition in the context of competing work teams, shifts, or departments. Since it negatively impacts goal commitment, the leader should be wary of instituting programs which would inhibit goal commitment.

Concluding Remarks

The suggested programs are intended to assist the commander with obtaining a commitment to their organizational goals. It would be difficult to design, in this effort, all possible combinations of programs which would acheive these ends. However, these recommendations provide sufficient information for the leader to institutionalize goal commitment programs.

This effort helped extend the research supporting goal commitment concepts. Future research should extend goal commitment theories to practical applications for use by virtually all types of organizations. By developing goal commitment models, organizations can improve performance through improved efficiencies in quality and productivity.

Appendix A
Survey Instrument

The following is a listing of the survey items as administered for the current research.

Part I

BACKGROUND INFORMATION

This section of the questionnaire contains several items dealing with personal characteristics. This information will be used to obtain a picture of the background of the "typical employee."

1. Your age is:

   1. Less than 20
   2. 20 to 25
   3. 26 to 30
   4. 31 to 40
   5. 41 to 50
   6. 51 to 60
   7. More than 60

2. Your highest education level obtained was:

   1. Non high school graduate
   2. High school graduate or GED
   3. Some Technical or Trade school
   4. Some college work
   5. Associate's degree
   6. Bachelor's degree
   7. Some graduate work
   8. Master's degree
   9. Doctoral degree

3. Your sex is:

   1. Male
   2. Female

4. Your pay grade is:

    1. WG 1-3
    2. WG 4-6
    3. WG 7-9
    4. WG10-12
    5. GS 1-3
    6. GS 4-6
    7. GS 7-9
    8. GS 10-12
    9. Other: (please specify)_____

5. Total months in this organization:

    1. Less than 1 year
    2. More than 1 year, less than 5 years
    3. More than 5 years, less than 10 years
    4. More than 10 years, less than 15 years
    5. More than 15 years, less than 20 years
    6. More than 20 years, less than 25 years
    7. More than 25 years, less than 30 years
    8. More than 30 years

6. How many people do you directly supervise (i.e., those for which you write performance reports)?

    1. None
    2. 1 to 2
    3. 3 to 5
    4. 6 to 8
    5. 9 to 12
    6. 13 to 20
    7. 21 or more

7. How much Process Action Team or Quality "classroom" or "formal" training have you had?

    1. None
    2. 1-16 hours
    3. 17 or more hours

8. I have belonged to a Process Action Team for:

    1. 1-3 months
    2. 4-6 months
    3. 7-9 months
    4. 10-12 months
    5. 13-15 months
    6. 16-18 months
    7. 19-21 months
    8. 22-24 months
    9. more than 24 months

9. My work center is:

    1. DS
    2. MA
    3. SC
    4. XP
    5. ML
    6. 2803 ABG

WORK GOALS

The following statements deal with your understanding of the nature of goals and objectives that guide your work. Use the rating scale given below to indicate the extent to which your work goals have the characteristics described.

          1 = Strongly disagree
          2 = Moderately disagree
          3 = Slightly disagree
          4 = Neither agree or disagree
          5 = Slightly agree
          6 = Moderately agree
          7 = Strongly agree

10. I know exactly what is expected of me in performing my job.

11. I understand clearly what my supervisor expects me to accomplish on the job.

12. What I am expected to do at work is clear.

13. I understand the priorities associated with what I am expected to accomplish on the job.

14. It takes a high degree of skill on my part to attain the results expected for my work.

15. Results expected in my job are very difficult to achieve.

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16. I must work hard to accomplish what is expected of me for my work.

17. I usually know whether or not my work is satisfactory on this job.

18. I seldom know whether I'm doing job well or poorly.

19. To be successful on my job requires all my skill and ability.

20. On my job, I seldom get a chance to use my special skills and abilities.

21. My job is very challenging.

WORK ATTITUDES

This section contains a number of statements that relate to feelings about your, work group, the demands of your job, and the supervision you receive. Use the following rating scale to indicate the extent to which you agree or disagree.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree or disagree
5 = Slightly agree
6 = Moderately agree
7 = Strongly agree

22. Within my work-group, the people most affected by decisions frequently participate in making the decisions.

23. In my work-group there is a great deal of opportunity to be involved in resolving problems which affect the group.

24. I am allowed to participate in decisions regarding my job.

25. I am allowed a significant degree of influence in decisions regarding my work.

26. My supervisor usually asks for my opinions and thoughts in decisions regarding my work.

JOB CHARACTERISTICS

The next questions ask you to describe the JOB ON WHICH YOU WORK. Please do not try to show how much you like or dislike your job; just try to be as accurate and factually correct as possible. Use the

following rating scale to indicate the extent to which you agree or disagree with the statements shown below.

        1 = Never
        2 = Very Rarely
        3 = Rarely
        4 = Sometimes
        5 = Often
        6 = Very Often
        7 = Always

27. I have the freedom to decide what I do on my job.

28. It is basically my own responsibility to decide how my job gets done.

29. I get to do a number of different things on my job.

30. My job requires that I do the same thing over and over.

31. As you do your job, you can tell how well you are performing?

32. Just doing the work required by my job gives me many chances to figure out how well I am doing.

33. How much does your job involve your producing an entire product or an entire service?

34. On my job I produce a whole product or perform a complete service.

35. How much does the work you do on your job make a visible impact on a product or service?

36. I can see the results of my own work.

37. A lot of people can be affected by how well I am doing my work.

38. In general, how significant or important is your job; that is, are the results of your work likely to significantly affect the lives or well-being of other people?

Remember, in answering these questions the rating scale is:

    1 = Never
    2 = Very Rarely
    3 = Rarely
    4 = Sometimes
    5 = Often
    6 = Very Often
    7 = Always

39. My job is so simple that virtually anybody could handle it with little or no training.

40. It takes a long time to learn the skills required to do my job well.

41. I do not have enough training to do my job well.

42. I have all the skills I need in order to do my job.

43. I have more than enough training and skills to do my job well.

SUPERVISION

For these questions, use the scale below to answer the responses that BEST describes your opinions.

    1 = Never
    2 = Very Rarely
    3 = Rarely
    4 = Sometimes
    5 = Often
    6 = Very Often
    7 = Always

44. I find my supervisor pleasant.

45. I find my supervisor cold.

46. I find my supervisor considerate.

47. I find my supervisor not supportive.

48. I find my supervisor accepting.

49. I find my supervisor nice.

50. I find my supervisor gloomy.

51. I find my supervisor quarrelsome.

52. I find my supervisor friendly.

53. I find my supervisor kind.

54. I find my supervisor not understanding.

55. I find my supervisor helpful.

56. My supervisor seems very familiar with the details of my job.

57. I trust my supervisor's ability to supervise my job.

58. I have full confidence in my supervisor.

59. I find it more relaxing when my supervisor is present in my office/shop.

60. Generally, I am more committed to my job/task when my supervisor is present in my office/shop.

JOB ATTITUDES-1

Here are some more questions about your present job or work. Use the following rating scale to express your feelings about your present job or work.

      1 = Never
      2 = Very Rarely
      3 = Rarely
      4 = Sometimes
      5 = Often
      6 = Very Often
      7 = Always

61. I have the knowledge and skills to complete my job to my satisfaction.

62. I am certain I can compete my job to my satisfaction.

63. If I discovered a bottleneck in my shop's work, I would be able to get it changed.

64. I feel like I can be a complete person here at work.

65. I am comfortable trying to solve problems in new ways.

66. I have the power to change things where I work.

67. I have control over my work.

68. I am powerless to change anything where I work.

69. Based on previous performance and current knowledge of my present job, I can achieve more difficult goals if I so desire.

For the next two questions, consider being promoted to a different job with which you have little or no experience. This new job is in the same office where you now work.

70. With little or no experience, I feel I could do a proportional amount of work as someone with more experience.

71. With little or no experience, I believe I could achieve the goals that have been set.

Now consider being promoted to a different job and location. You again have little or no experience in this new job.

72. With little or no experience, I feel I could do a proportional amount of work as someone with more experience.

73. I feel I could accomplish the established goals.

74. I could commit to those goals which I feel I could meet.

75. It would be difficult for me to commit to a set of goals if I believed them to be too difficult to achieve.

Remember, the responses are:

    1 = Never
    2 = Very Rarely
    3 = Rarely
    4 = Sometimes
    5 = Often
    6 = Very Often
    7 = Always

76. I am more apt to perform at the same level as my co-workers.

77. Generally, I perform to the best of my ability regardless of my co-workers' performance.

78. I fully accept the group's goals as my own.

79. The group's goals have no influence on my personal goals.

80. I'm committed to achieving the goals of my group.
You are now finished completing the first section of the questionnaire. Please answer the following questions on the answer sheet with the pre-coded number "2" in the "IDENTIFICATION NUMBER" area.

PART II

Use one of the following responses in answering each question:

1 = Never
2 = Very Rarely
3 = Rarely
4 = Sometimes
5 = Often
6 = Very Often
7 = Always

1. Regardless of other interactions with my supervisor, I had a major influence on the goals that were set.

2. Compared to my supervisor, I have no influence over the goals that were set.

3. Regardless of other interactions, compared to my supervisor, I have the most say in determining the goal(s).

For the next three questions, consider that the task/job of you and your co-workers required multiple shifts, or multiple groups on the same shift, or perhaps, several people on the same shift doing similar tasks. The responses remain the same.

4. I would be more committed to the goals if my performance was measured against the worker(s) doing the same task on a different shift.

5. I would be more committed to my job if my group's performance was measured against the work of another group's performance.

6. If my performance was being measured against the work of another co-worker, I would try to out-perform that worker.

JOB ATTITUDES-2

Empowerment is belief that you can do what you set out to do. An empowered person has both the ability and the power to complete a task. Use the rating scale shown above to indicate the level of empowerment where you work.

7. I am empowered to do everything I need to do on my job.

8. I now have skills I never knew I had.

9. Watching and learning from other people has helped me do my job.

10. My previous performance leads me to believe I can now complete work I never used to be able to do.

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Remember, the responses are:

       1 = Never
       2 = Very Rarely
       3 = Rarely
       4 = Sometimes
       5 = Often
       6 = Very Often
       7 = Always

11. I am empowered to take situations at work into my own hands.
12. People in my organization are empowered.

13. My supervisor has convinced me that I can complete tasks I previously did not think I could.

14. I am empowered to solve problems I encounter on the job in different ways.

15. I can now accomplish tasks at work I never thought I'd be able to do.

16. My managers and supervisors empower me to do all the tasks I need to do.

WORK ATMOSPHERE

The next questions ask you to describe the JOB ON WHICH YOU WORK.
Please do not try to show how much you like or dislike your job; just
try to be as accurate and factually correct as possible. Use the
following rating scale to indicate the extent to which you agree or
disagree with the statements shown below.

        1 = Never
        2 = Very Rarely
        3 = Rarely
        4 = Sometimes
        5 = Often
        6 = Very Often
        7 = Always

17. This organization is always moving toward the development of new
answers.

18. Around here people are allowed to try to solve the same problem in
different ways.

19. Creativity is encouraged here.

20. People in this organization are always searching for fresh, new
ways of looking at problems.

21. The leadership acts as if we are not very creative.

22. We're always trying out new ideas.

23. This organization is open and responsive to change.

24. People here try new approaches to tasks, as well as tried and true
ones.

25. I have all the skills I need in order to do my job.

26. I do not have enough training and skills to do my job well.

27. If I only try harder, I can do what is expected of me at work.

REWARDS

Here are some things that could happen to people when they do their jobs especially well. How likely is it that each of these things would happen if you performed your job especially well? Use any number from 1 to 4 to indicate your response.

1 = Not at all likely
2 = Somewhat likely
3 = Quite likely
4 = Extremely likely

28. You will get a pay increase.

29. You will feel better about yourself as a person.

30. You will have an opportunity to develop your skills and abilities.

31. You will be given chances to learn new things.

32. You will be promoted or get a better job.

33. You will get a feeling that you've accomplished something worthwhile.

34. My supervisor has the power to reward my performance.

35. It makes me feel good when my supervisor publicly praises my performance.

36. I am more committed to my job/task when my supervisor publicly praises my performance.

37. It makes me feel good when my supervisor privately praises my performance.

38. Private recognition helps me be more committed to my job.

39. Regardless of how praise or recognition is given, I am more committed to my job when my supervisor recognizes my performance.

40. Consider the likelihood of favorable or unfavorable consequences of goal attainment in terms of job security, future pay increases or promotions, co-worker respect, etc. In general, I think it would be advantageous to attain the overall goal.

Here are some more questions about rewards you receive on the job. Use the responses below to answer the following questions:

1 = Never
2 = Very Rarely
3 = Rarely
4 = Sometimes
5 = Often
6 = Very Often
7 = Always

Consider the possibility of an incentive program where specified bonuses were offered for exceeding reasonable, obtainable goals. (For example, x dollars for just exceeding the goals, 2x dollars for exceeding the goal(s) by a few more).

41. I have a good chance of receiving the bonus pay.

42. I would try harder to achieve the goal necessary to receive the extra pay.

43. I would try to achieve the next higher goal (next higher bonus pay) if I were achieving a smaller bonus payment.

44. Regardless of how hard I try, I could never achieve the bonus pay.

45. Regardless of the feedback program, I have my own method of tracking my performance relative to the organizational goals.

46. I reward myself when I achieve the goals set by my organization.

47. My personal reward system is more effective in getting me committed to the organizational goals than the organizational reward system.

48. My personal reward system is adapted from the organizational reward system.

49. My personal reward system has little or nothing in common with the organizational reward system.

50. My personal reward system enhances my own commitment to the organizational goals.

PERFORMANCE OBSTACLES AND CONSTRAINTS

The following items deal with obstacles and constraints that you may encounter in your work which inhibit good performance. For example, one salesperson might exceed the performance of another simply because he or she was lucky enough to get a lucrative territory. For the unlucky salesperson, the less desirable territory is an "obstacle" for him or her to overcome. Performance obstacles are often factors "beyond one's control" that inhibit (or enhance) maximum job performance. Use the rating scale below to indicate how frequently each performance obstacle or constraint poses a problem for you.

        1 = Never
        2 = Very Rarely
        3 = Rarely
        4 = Sometimes
        5 = Often
        6 = Very Often
        7 = Always

51. Job Induced Constraints (factors in the actual make-up of the job itself such as machine breakdown, inadequate tools and supplies, etc.)

52. Communication Obstacles (restrictions in communicating with others important to getting your job done.)

53. Administrative or Policy Constraints (actions or attitudes of your immediate work group that make it harder to do a good job.)

54. Supervisor Constraints (actions or attitudes of your immediate supervisor that make it harder to do a good job.)

The following questions deal with the AFLC quality program. Please use
the following scale in responding:

        1 = Not at all
        2 = Somewhat less
        3 = Equal
        4 = Somewhat greater
        5 = Practically all

55. To what extent do you know what is expected of you individually
under the AFLC quality program?

56. To what extent have you personally changed what you do day-to-day
as a result of the AFLC quality program?

57. When you have a choice on how to do your work, to what extent do
you perform it using AFLC quality techniques or approaches?

58. When your entire work group has a choice on how to perform their
work, to what extent do they perform it using AFLC quality techniques or
approaches?

59. To what extent do you think quality is important for its own sake?

60. In your opinion, to what extent is quality a way of life in your
organization?

61. To what extent do you think senior management is committed to
making quality a way of life?

THIS COMPLETES THE QUESTIONNAIRE. COULD YOU PLEASE ANSWER THESE FINAL
THREE QUESTIONS?

62.   What did you think about the length of this questionnaire?

        1.   Much too long.
        2.   Somewhat too long.
        3.   Just about right.
        4.   Somewhat too short.
        5.   Much too short.

63.   How seriously did you answer the questions?

        1.   Not at all seriously.
        2.   A little seriously.
        3.   Somewhat seriously.
        4.   Quite seriously.
        5.   Very seriously.

64.   How much did you enjoy taking this questionnaire?

        1.   Not at all pleasant, enjoyable or fun.
        2.   A little enjoyable.
        3.   Somewhat enjoyable.
        4.   Quite enjoyable.
        5.   Extremely pleasant, enjoyable and fun.

        We appreciate your cooperation in spending time to answer our
questions.
If you have any comments on this study or other issues here in this
organization, please feel free to use the space below for that purpose.

                Once again, thank you.

COMMENTS:

Appendix B
Descriptive Statistics

The following are the responses from both the pre-test and the target groups.

ITEM	MEAN	STD DEV
1.	4.991	.710
2.	6.904	1.317
3.	1.079	.302
4.	6.272	1.906
5.	2.421	1.112
7.	1.789	.803
8.	1.070	1.400
9.	1.895	1.185
44.	5.719	1.069
45.	2.368	1.257
46.	5.465	1.206
47.	2.649	1.310
48.	5.167	1.254
49.	5.535	1.184
50.	2.368	1.199
51.	2.386	1.327
52.	5.623	1.340
53.	5.404	1.381
54.	2.570	1.283
55.	5.211	1.386
56.	4.684	1.459
57.	5.351	1.540
58.	5.307	1.500
59.	4.132	1.543
60.	2.649	1.382
69.	5.333	1.231
70.	5.026	1.442
71.	4.912	1.549
72.	4.833	1.451
73.	5.114	1.368
74.	5.851	1.123
75.	3.737	1.608
76.	3.018	1.344
77.	6.088	.955
78.	4.904	1.276
79.	3.781	1.394
80.	5.649	.941

These items correspond to Part II of the survey.

ITEM	MEAN	STD DEV
1.	4.614	1.460
2.	3.316	1.495
3.	3.939	1.530
4.	3.202	1.471
5.	3.544	1.619
6.	4.781	1.567
10.	4.860	1.426
15.	4.246	1.455
28.	1.807	.871
29.	3.509	.914
30.	2.754	1.052
31.	2.588	1.029
32.	1.746	.948
33.	3.254	1.054
34.	4.430	1.780
35.	5.202	1.512
36.	4.272	1.674
37.	5.430	1.433
38.	4.491	1.720
39.	4.895	1.571
40.	5.465	1.371
41.	4.342	1.847
42.	4.693	1.715
43.	4.518	1.806
44.	2.860	1.629
45.	4.877	1.482
46.	4.272	1.587
47.	4.675	1.571
48.	2.605	1.361
49.	4.570	1.941
50.	4.860	1.504

The following is the frequency counts from the target population.

ITEM	MEAN	STD DEV
1.	4.268	1.318
2.	3.954	1.655
3.	1.546	1.254
4.	5.160	2.391
5.	3.121	1.884
6.	2.307	1.097
8.	1.915	2.261
44.	5.405	1.360
45.	2.755	1.569
46.	4.974	1.816
47.	2.761	1.527
48.	4.853	1.771
49.	5.170	1.540
50.	2.912	1.680
51.	2.958	1.789
52.	5.569	1.324
53.	5.399	1.347
54.	3.029	1.743
55.	5.085	1.457
56.	4.912	1.682
57.	5.402	1.580
58.	5.082	1.721
59.	4.186	1.676
60.	3.330	1.671
69.	5.271	1.548
70.	4.673	1.667
71.	4.673	1.671
72.	4.582	1.498
73.	4.951	1.560
74.	5.523	1.500
75.	3.585	1.664
76.	3.876	1.715
77.	5.931	1.264
78,	5.095	1.646
79.	3.588	1.743
80.	5.265	1.657

ITEM	MEAN	STD DEV

The following items are from Part II of the survey.

ITEM	MEAN	STD DEV
1.	3.699	1.714
2.	4.000	1.708
3.	3.278	1.637
4.	3.542	1.812
5.	3.258	1.695
6.	4.572	1.865
10.	4.608	1.602
15.	4.451	1.549
28.	1.820	1.194
29.	3.693	1.251
30.	2.967	1.325
31.	2.807	1.313
32.	2.170	1.339
33.	3.353	1.190
34.	5.150	1.668
35.	4.974	1.750
36.	4.304	1.790
37	5.624	1.519
38.	4.771	1.780
39.	5.036	1.701
40.	5.592	1.458
41.	4.484	1.856
42.	5.033	1.796
43.	5.042	1.778
44.	2.748	1.593
45.	4.556	1.627
46.	3.990	1.666
47.	4.062	1.704
48.	2.827	1.580
49.	4.703	1.829
50.	4.448	1.733

Appendix C
Reliability Analysis

MEASURE	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED
1. TRUST					
SUPER14	9.9912	7.4424	.8855	.8102	.8231
SUPER13	10.6579	8.6872	.7483	.5703	.9360
SUPER15	10.0351	7.8749	.8468	.7780	.8569

ALPHA =   .9131   STANDARDIZED ITEM ALPHA =   .9126

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED
2. SUPERVISOR SUPPORT					
SUPER1	65.5351	113.2952	.7821	.7643	.9321
SUPER2	64.6228	111.5644	.7187	.6916	.9338
SUPER3	65.7895	112.0438	.7335	.7079	.9333
SUPER4	64.9035	112.0703	.6648	.6196	.9359
SUPER5	66.0088	111.9203	.7368	.6880	.9332
SUPER6	65.6404	111.2766	.8427	.7858	.9300
SUPER7	64.6228	112.7503	.7082	.5816	.9342
SUPER8	64.6404	113.2058	.6112	.4530	.9380
SUPER9	65.5526	109.1344	.8105	.7853	.9304
SUPER10	65.6930	108.9934	.8210	.8212	.9301
SUPER11	64.8246	111.1017	.7204	.5967	.9338
SUPER12	65.9649	113.3439	.5979	.5097	.9386

ALPHA =   .9388   STANDARDIZED ITEM ALPHA =   .9405

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED
3. REWARDS					
REWARD7	49.8421	92.2049	.3810	.2790	.7915
REWARD8	49.0702	89.1809	.5927	.6186	.7697
REWARD9	50.0000	89.6106	.5044	.6407	.7777
REWARD10	48.8421	88.3111	.6696	.6197	.7634
REWARD11	49.7018	89.5740	.4876	.4737	.7795
REWARD12	49.3772	91.1397	.4931	.5659	.7792
REWARD13	48.7281	96.6422	.3892	.3127	.7895
REWARD14	49.8509	87.2431	.5120	.4647	.7767
REWARD15	49.5000	93.0310	.3791	.4956	.7912
REWARD16	49.6754	89.4247	.4609	.5478	.7826
REWARD17	48.1316	98.8763	.2120	.2483	.8073

ALPHA =   .7987   STANDARDIZED ITEM ALPHA =   .8029

MESURE	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED [1]

4. PHYSICAL PRESENCE

SUPER16	2.6491	1.9112	.3464	.1200	.
SUPER17	4.2105	2.4332	.3464	.1200	.

ALPHA = .5118   STANDARDIZED ITEM ALPHA = .5146

5 PEER INFLUENCE

JAI17	5.2632	2.5850	.0943	.0089	.
JAI15	6.0877	.9126	.0943	.0089	.

ALPHA = .1530   STANDARDIZED ITEM ALPHA = .1724

6. PARTICIPATION

WA2	24.5439	41.1175	.6515	.5415	.8591
WA3	24.3070	40.3385	.7579	.6390	.8386
WA4	24.1754	40.1459	.7267	.5838	.8445
JAI21	24.7807	43.7656	.7203	.6209	.8475
JAI22	23.7105	46.6146	.5371	.3844	.8749
JAI23	25.4561	43.5069	.6920	.6241	.8511

ALPHA = .8745   STANDARDIZED ITEM ALPHA = .8759

7. COMPETITION

JAI24	3.5439	2.6220	.7451	.5552	.
JAI25	3.2018	2.1625	.7451	.5552	.

ALPHA = .8517   STANDARDIZED ITEM ALPHA = .8540

8. EXPECTANCY

REWARD1	13.9298	13.4995	.3275	.2200	.7458
REWARD2	12.2281	12.8325	.4100	.2949	.7271
REWARD3	12.3825	10.4422	.7066	.7330	.6398
REWARD4	13.1491	10.9599	.6366	.6755	.6631
REWARD5	13.9123	13.0188	.2407	.1891	.7821
REWARD6	12.4825	10.8714	.6288	.4773	.6644

ALPHA = .7448   STANDARDIZED ITEM ALPHA = .7454

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED [1]
MESURE					

9. SELF EFFICACY

JAI9	26.4474	28.8158	.4734	.2660	.8686
JAI10	26.6754	24.9645	.6781	.6168	.8352
JAI11	26.7895	22.5571	.7984	.6704	.8107
JAI12	26.8684	23.0002	.8300	.7546	.8045
JAI13	26.5877	24.4391	.7924	.7070	.8143
JAI14	25.9298	31.0216	.3607	.1912	.8821

ALPHA = .8625   STANDARDIZED ITEM ALPHA = .8538

10. SELF ADMINISTERED REWARDS

REWARD18	13.8070	14.7766	.5095	.2890	.7640
REWARD19	14.4912	13.2256	.5961	.3747	.7216
REWARD20	14.0877	12.7710	.6576	.4816	.6881
REWARD23	13.9035	13.8579	.5806	.4154	.7295

ALPHA = .7805   STANDARDIZED ITEM ALPHA = .7796

11. GOAL COMMITMENT

JAI18	5.6491	.8846	.5074	.2575	.
JAI20	4.9825	1.5572	.5074	.2575	.

ALPHA = .6557   STANDARDIZED ITEM ALPHA = .6732

The following are the reliabilities from the target population.

MEASURE	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED

1. TRUST

SUPER14	9.9935	8.3737	.7054	.5120	.6174
SUPER13	10.4837	8.3948	.6258	.4484	.6998
SUPER15	10.3137	8.8390	.5398	.3060	.7951

ALPHA = .7825 STANDARDIZED ITEM ALPHA = .7853

2. SUPERVISOR SUPPORT

SUPER1	61.9869	168.1441	.7457	.6077	.9172
SUPER2	61.1471	163.3258	.7606	.6305	.9160
SUPER3	62.4183	157.2015	.7859	.7800	.9146
SUPER4	61.1536	171.1665	.5701	.5613	.9236
SUPER5	62.2451	169.6807	.5412	.3717	.9253
SUPER6	62.2222	163.6357	.7686	.7567	.9157
SUPER7	61.3039	162.7500	.7166	.6817	.9177
SUPER8	61.3497	160.5167	.7183	.6557	.9178
SUPER9	61.7941	173.1083	.6280	.6001	.9215
SUPER10	61.9641	173.9299	.5885	.6284	.9227
SUPER11	61.4216	161.4643	.7174	.6333	.9178
SUPER12	62.3072	167.7152	.7006	.5495	.9186

ALPHA = .9254 STANDARDIZED ITEM ALPHA = .9263

3. REWARDS

REWARD7	51.6993	111.4569	.2591	.0965	.8276
REWARD8	51.9052	101.5287	.5301	.5241	.8036
REWARD9	52.5752	98.7632	.5902	.5995	.7975
REWARD10	51.2549	104.3873	.5474	.5183	.8032
REWARD11	52.1078	100.5752	.5447	.6617	.8021
REWARD12	51.8431	99.0901	.6311	.5553	.7941
REWARD13	51.2288	109.8885	.3960	.2551	.8154
REWARD14	52.3954	102.1677	.4648	.3825	.8103
REWARD15	51.8464	98.4321	.6083	.6195	.7957
REWARD16	51.8366	100.1634	.5619	.5863	.8004
REWARD17	50.6863	112.0258	.2515	.2424	.8278

ALPHA = .8220 STANDARDIZED ITEM ALPHA = .8201

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED[1]
MEASURE					

4. PHYSICAL PRESENCE

SUPER16	3.3889	2.9270	.3048	.0929	.
SUPER17	4.2157	2.8255	.3048	.0929	.

ALPHA = .4671   STANDARDIZED ITEM ALPHA = .4672

5. PEER INFLUENCE

JAI17	5.4150	2.7682	.2917	.0851	.
JAI15	6.0784	1.1545	.2917	.0851	.

ALPHA = .4200   STANDARDIZED ITEM ALPHA = .4516

6. PARTICIPATION

WA2	21.7026	38.0982	.5846	.4583	.6519
WA3	21.3889	38.2712	.5485	.4424	.6630
WA4	20.8824	38.1632	.4906	.3689	.6831
JAI21	22.0490	42.2435	.4870	.3988	.6844
JAI22	20.8660	48.7853	.2023	.1127	.7552
JAI23	22.4412	42.7851	.4719	.3942	.6888

ALPHA = .7281   STANDARDIZED ITEM ALPHA = .7243

7. COMPETITION

JAI24	3.3464	3.0862	.6244	.3899	.
JAI25	3.6307	3.4468	.6244	.3899	.

ALPHA = .7681   STANDARDIZED ITEM ALPHA = .7688

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORR	SQUARED MULTIPLE CORR	ALPHA IF ITEM DELETED [1]
MEASURE					

8. EXPECTANCY

REWARD1	15.1373	31.4368	.5257	.4178	.9044
REWARD2	13.2647	29.2117	.7009	.5831	.8792
REWARD3	13.9902	27.1245	.8104	.7050	.8615
REWARD4	14.1503	27.5839	.7781	.6711	.8669
REWARD5	14.7876	27.3351	.7690	.6291	.8683
REWARD6	13.6046	29.3415	.7288	.6749	.8754

ALPHA = .8950   STANDARDIZED ITEM ALPHA = .8942

9. SELF EFFICACY

JAI9	25.1961	35.7188	.4415	.2634	.8392
JAI10	25.7647	31.2297	.6377	.5096	.8018
JAI11	25.7941	30.8591	.6561	.5033	.7977
JAI12	25.8856	31.4065	.7215	.5770	.7849
JAI13	25.5163	32.0866	.6566	.5209	.7979
JAI14	24.9150	34.9632	.5445	.4221	.8200

ALPHA = .8346   STANDARDIZED ITEM ALPHA = .8340

10. SELF ADMINISTERED REWARDS

REWARD18	12.7059	17.6181	.3944	.1802	.7516
REWARD19	13.3007	14.7552	.6209	.3892	.6271
REWARD20	13.2288	14.8852	.5868	.3756	.6467
REWARD23	12.8137	15.3980	.5306	.3147	.6801

ALPHA = .7390   STANDARDIZED ITEM ALPHA = .7376

11. GOAL COMMITMENT

JAI18	5.5588	2.2080	.4616	.2131	.
JAI20	5.2712	2.4672	.4616	.2131	.

ALPHA = .6310   STANDARDIZED ITEM ALPHA = .6317

Appendix D
Regression Analysis

The following is the summary table from the regression analysis for the pre-test population.

Summary table

Step	MultR	Rsq	F(Eqn)	SigF		Variable	BetaIn
1	.4012	.1609	21.099	.000	In:	SELFEF	.4012
2	.4657	.2168	15.090	.000	In:	PARTIC	.2398

The following data are presented from the target survey population.

Summary table

Step	MultR	Rsq	F(Eqn)	SigF		Variable	BetaIn
1	.2679	.0718	23.045	.)00	In:	REWARDS	.2679
2	.3499	.1224	20.716	.000	In:	SELFEF	.2279
3	.3890	.1513	17.590	.000	In:	TRUST	.1799
4	.4044	.1635	14.417	.000	In:	EXPECT	.1119
5	.4182	.1749	12.461	.000	In:	COMPETE	-.1083

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FIELD	GROUP	SUB-GROUP	Goal Commitment, Goal setting Rewards
05	08		Self efficacy Participation Competition

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

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The purpose of this study was to determine the factors influencing goal commitment by reviewing the literature on goal setting. The study had four basic objectives:
(1) Determine the factor influencing goal commitment. (2) Construct a goal commitment model based on previous research. (3) Measure the validity of the determinants via a survey instrument. (4) Propose practical applications for commanders, managers and supervisors to obtain goal commitment.

The study found that five determinants significantly determine goal commitment. They are: external rewards, self efficacy, trust, expectancy and competition. The study found that competition had a negative impact on goal commitment.

Analysis of an attitudinal survey found that specific programs can affect organizational goal commitment. Many of the programs involve direct management or commander support. For example, reward programs can be structured so that goal commitment can be attained. Other programs are designed to help the worker "see" their worth. Examples include programs designed to facilitate a person's self efficacy, and improve the trust between the work and management.